Nursing World

FEBRUARY 1959

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IN THIS ISSUE

COVER: An indication of the progress made in the fight against heart diseases is the move of cardiac catheterization from the research laboratory and into use in hospitals such as the Georgetown University Hospital. This issue is devoted to bringing you up to date on new developments in the treatment of cardiac diseases and improved nursing care of the cardiac patient.

Because they are so busy in their occupation and, in many instances, running homes and raising families besides, nurses are often unaware of what those outside their profession are saying—and writing—about them. To help you keep informed on the opinions of others about nursing, NURSING WORLD this month initiates a new column, "What They're Saying" (page 5), written by Shirley Hope Alperin, R.N., a popular nurse-author whose stories about nurses have appeared regularly on our pages.

"Comprehensive Care for the Rheumatic Heart Patient" (page 8) was written by the four members of the staff of the University of Oklahoma Medical Center who developed the plan of care for one of their patients. Rosa Corrie, R.N., assistant director of nursing service at the hospital, graduated from the University of Oklahoma School of Nursing in 1942 and has been in her present position since April 1956. Jack D. Welsh, M.D., received his bachelor's degree from the University of Nebraska in 1950 and his M.D. from that university four years later. He is now chief medical resident at the Medical Center. Lucille Sommer, nutrition clinic dietitian at the hospital, is a graduate of Iowa State University and did graduate work at the University of Oklahoma. Armin L. Saeger Jr., in addition to working part time as medical social worker at the Medical Center, also works with the Kickapoo Indians. A graduate of Earlham College in Richmond, Ind., where he received his bachelor's degree, Mr. Saeger holds a Master of Social Work from the University of Oklahoma School of Social Work.

Myrtle H. Coe

The "War Against Heart Diseases" is described by Myrtle H. Coe, R.N., A.B., on page 12. Mrs. Coe, assistant professor at the University of Minnesota School of Nursing, received her bachelor's degree from Pembroke College of Brown University and has to date completed 115 credits of graduate work at the Graduate School of the University of Minnesota. Mrs. Coe has served on the executive committee of the Minnesota Heart Association since 1952 and has been a member of the education committee of the Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association since 1948.

Florence C. Elliott, R.N., M.N.A., author of "Emotional Needs of the Cardiac Patient" (page 14) and nursing supervisor of the Variety Club Heart Hospital, University of Minnesota Hospitals, Minneapolis, Minn., received a B.S. from the University of Cincinnati in 1949. She received a B.S. in Professional Nursing from the University of Minnesota in 1953 and the Master of Nursing Administration from that university in 1956.

Helen Creighton, R.N., J.D., who explains "The Nurse's Role in Cardiac Catheterization," (page 25) has had a varied career. Before entering nursing Miss Creighton had taught college mathematics and worked in the War Department and in the private practice of law. She received a B.S.N. degree from Georgetown University School of Nursing.

Alice E. Keefe, R.N., Ph.D., in the final article in a series of three, asks, "What Do Grades Represent?" (page 31). Dr. Keefe is chairman both of the Committee on Research and the Division of Nursing Education for the Southern New York League for Nursing.

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Vol. 133 FEBRUARY 1959 No. 2

ARTICLES

Comprehensive Care for the Rheumatic Heart Patient
Rosa Corrie, R.N., Jack D. Welsh, M.D., Lucille Sommer, and Armin L. Saeger Jr. 8

War Against Heart Diseases
Myrtle H. Coe, R.N., A.B. 12

Emotional Needs of the Cardiac Patient
Florence C. Elliott, R.N., M.N.A. 14

The Nurse's Role in Cardiac Catheterization
Helen Creighton, R.N., J.D. 25

What Do Grades Represent?
Alice E. Keefe, R.N., Ph.D. 31

DEPARTMENTS

In This Issue 3

What They're Saying
Shirley Hope Alperin, R.N. 5

NURSING WORLD Reports 6

INTERVIEW: What's New In Cancer Nursing?
Julie E. Miale, R.N. 18

Advances and Trends in Drug Therapy
Joan Sarvajic, R.N. 21

Let's Talk It Over
Theresa G. Muller, R.N. 29

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what they're saying

by SHIRLEY HOPE ALPERIN, R.N.

THE article entitled "Cruelty in Maternity Wards," written by Gladys Denny Shultz and appearing in the May 1958 issue of the *Ladies' Home Journal,* was an indictment of certain obstetrical practices. The article was directed in part against registered nurses who reportedly engaged in some of these practices. The springboard for the article was a letter from a woman who signed herself "Registered Nurse." In the letter she asked the magazine to "investigate the tortures that go on in modern delivery rooms."

The *Journal* published this letter in November 1957. Due to the overwhelming response from readers, many of whom corroborated "Registered Nurse's" charges, the magazine made public its findings in May. Once again, a flood of letters poured into the *Journal* offices. Subsequently, another article on the same subject was published in the December 1958 issue. It is interesting to note that of the numerous professional people who wrote to the magazine, several R.N.'s confirmed the existence of the alleged practices.

NURSING WORLD, starting with this issue, will regularly bring to your attention comments—favorable and unfavorable—on nursing, made by those outside the profession. This month we shall present a resumé of the comments made in the *Ladies' Home Journal.*

In the *Journal* article, one woman voiced the opinion that a definite hostility existed among nurses toward women in childbirth. She stated that there appeared to be a feeling that a woman in childbirth has brought her troubles on herself and therefore deserves no kindness. The nurses' attitude seemed to be, "One moaning with pain from an operation is an object of sympathy. A woman moaning with pain in childbirth is just a nuisance."

This attitude was further reinforced by other women who claimed that nurses treated mothers as "unimportant cogs in the machinery of the mass production of infants; and . . . treat the father as a strictly incidental and somewhat comic figure in the well-charted routine of the maternity ward." Surprisingly, a desire was expressed by many to have their husbands with them during the delivery. Those who were permitted to share such an experience found it spiritually meaningful and physically helpful. It is true that some men are not equipped for an emotional crisis of this sort, but as the *Journal* pointed out, "there is no reason why a few unstable husbands should cause a ban on *all* husbands, the majority of whom have level heads as well as a great deal of usefulness."

Letters came from women who complained of the practice of delaying deliveries by nurses forcibly holding the mother's legs together. Such a charge was rebutted by an R.N. who wrote that a practice of this nature is unheard of in large hospitals well staffed with interns and residents. However, one irate mother declared that her nine-year-old retarded son was the victim of a delayed delivery. She stated that her baby was born in a large hospital in a well-known city. "At ten thirty, a nurse told me that my baby had 'crowned' and that he had black hair," said the woman. "When the doctor didn't arrive in time, they stopped me from giving birth by holding my legs together until I was given anesthesia. The time of delivery on the birth record is 2:30 A.M." The baby suffered a brain injury from lack of oxygen.

The *Ladies' Home Journal* carefully made the point that intentionally delayed deliveries are not practiced by most doctors. Fortunately, reputable physicians neither recommend nor condone such procedures. They also condemn the act of inducing birth when it is not necessary.

Shattering Experience

Nevertheless, several mothers reported that such practices actually occurred. One woman, a primipara, said an attending registered nurse, had a shattering experience in the labor room. The doctor, she said, had apparently another "appointment" and was eager to get the delivery over with. When the patient wasn't progressing fast enough, he administered pituitrin to hasten the birth. Though her cervix was not fully dilated, he attempted to pull at the baby's head with the forceps that had slipped twice. The viable infant was placed in a respirator, but died 24 hours later from brain damage which was verified by a post mortem examination. After the birth, the doctor left the mother without examining her to see if there was any cervical damage. An intern was told to suture up the poorly made episiotomy. Following this nightmarish experience, the woman went into shock due to loss of blood.

Many other mothers reported varying unpleasant experiences during childbirth. Some of these women have had four to eight children. What puzzled them mainly were the abuses suffered in one hospital and the exceptionally fine treatment given in another.

Letters critical of the May article came from doctors and nurses throughout the country. A typical letter came from a physician married to an R.N. who had worked as an obstetrical nurse in the largest county hospital in the United States, where over a thousand babies are born each month. He stated, as did many professionals, that he and his wife (who was also the mother of three) had never seen any of the sadistic practices described.

Further indignation was expressed by medical people who stated that the women who complain of their treatment during delivery are "generally spoiled, hysterical, and the victims of their own fears." Nurses and doctors wrote that the memory of a woman in childbirth is unreliable because she has been medicated. The *Journal* disputed this fact with the report that some of the women who related cruel experiences had been given no drugs at all. However, it is known that in certain instances when scopolamine is administered without a tranquilizer, hallucinations, "wild dreams," and psychomotor agitations may appear.

Professionals complained to the magazine that "women seem to demand the kind of care which busy hospital staffs simply haven't time to give." At the 40th annual dinner of the Maternity Center Association in New York City, Dr. John Whitridge Jr., associate professor of obstetrics and gynecology at the Johns Hopkins Medical School, offered some pertinent suggestions. Dr. Whitridge reported that each year in hospitals there are several hundred thousand women who deliver without ever having the benefit of an examination by a physician during labor. He states that these mothers

are attended during labor and delivered by nurses who have had no special training for this role. Some are practical nurses and others, nonprofessional hospital workers.

According to Dr. Whitridge, there are not enough doctors to give adequate care to all maternity patients. To alleviate this shortage, he suggested a program of training for at least 400 nurse-midwives a year. Such registered nurses with specialized training would be able to help in the care and education of patients during pregnancy. "They would be available for continuing competent care during labor," said Dr. Whitridge. "In the event that circumstances prevented the attending physician from being present for the delivery, it would be competently performed, instead of on an emergency basis by someone ill equipped for this function." The *Ladies' Home Journal* concurred with Dr. Whitridge's plan.

The article concluded with a number of recommendations for the improvement of conditions in maternity wards. The *Journal* advocated a comprehensive medical prenatal program. During this period, the pregnant woman should endeavor to learn as much as possible about her changing bodily functions by reading and by talks with her physician. She will then feel relaxed and reassured when the time comes for her to go to the hospital. Cheerfulness and a warm reception from hospital personnel are important in keeping her spirits high on arrival. Permission to have her husband with her should be granted if she so desires.

If the mother's labor is normal, she ought to have the right to refuse any drugs. Her delivery should never be delayed or induced unless it is medically sound. It would be a great emotional comfort to her to know that her doctor can meet her at the hospital and stay within call until the birth is ready. If this is not possible, the doctor should be with her at least 30 minutes before delivery, remaining throughout the final stages. To avoid anxiety and unnecessary delay, she should understand that the services of a trained nurse-midwife are usually adequate.

"Above all, she wishes to be treated as a human being," stated the *Journal* article. "Giving birth is a function she shares with animals, but a woman in labor is not an animal . . . she responds to encouragement, to cheerfulness, to kindness . . ."

According to the *Ladies' Home Journal*, most prospective mothers realize that members of the medical profession are truly dedicated human beings. On the other hand, doctors and nurses should more fully understand their patients if undesirable practices in the maternity wards are to be eliminated.

NURSING WORLD

REPORTS

N.Y.U. Dinner

The New York University School of Education Nurse Alumnae and the Department of Nurse Education will hold their third annual dinner at the Sheraton-East Hotel in New York City on Saturday, Feb. 14. The dinner, in the Main Ballroom, will follow a reception which is to be held in the Trianon Room.

During the affair, Mrs. Estelle Osborne, co-ordinator of nursing advisory and other general administrative services of the National League for Nursing, will be honored as an outstanding nursing leader. Margaret Arnstein, chief of Public Health Nursing Services of the United States Department of Health, Education and Welfare, will discuss "Planning Today for the National Nursing Needs of the Future."

Tickets for the dinner may be obtained, at $9 per person, from Gertrude Stokes, Department of Nurse Education, New York University, 49 South, New York 3, N.Y.

Army Nurse Retires

Lieut. Col. Katharine V. Jolliffe, chief nurse at Second United States Army Headquarters since July 1946, recently retired after serving with the U.S. Army Nurse Corps 28 years. Succeeding Lieut. Colonel Jolliffe is Lieut. Col. Frances C. Gunn, formerly chief nurse of the U.S. Army Communization Zone in Europe.

Lieut. Colonel Jolliffe was honored in a retirement ceremony and retreat review at Fort George G. Meade, Maryland, on Oct. 31. Among those attending the ceremony were Col. Inez Haynes, Chief, Army Nurse Corps, and Lieut. Col. Margaret I. Harper, Assistant Chief of the Corps.

Increased Social Security

Several changes made in Social Security during 1958 became effective the first of this year. Some of the changes in the benefits are:

► Dependents of workers entitled to disability benefits may be eligible for payments. These include the disabled person's wife, 62 years old or over; wife, regardless of age, with children in her care; and dependent children. Applications for these benefits must be filed with the social security district office.

► Previously a disabled person must have worked for at least five years out of the 10 and 1½ years out of the three years before becoming disabled. The provision calling for 1½ years employment has now been dropped. Any person who previously could not qualify because of the latter provision is advised to contact his social security office immediately and file an application.

► Disabled individuals may now receive full social security disability benefits even when receiving State workmen's compensation benefits or some type of disability payment from the Federal Government.

► A dependent parent of a worker may also receive payments, even when the worker is survived by a widow, widower, or child. The parent must file an application.

► Further information about these and other changes in the benefits may be obtained from social security district offices.

Heads Beirut Army Hospital

Maj. Beata Lieske, Army Nurse Corps, has been assigned to take charge of the nurses assigned to the Army hospital, which was recently established in Beirut, Lebanon. Major Lieske was transferred to Beirut from the United States Army's Second General Hospital, Landstuhl, Germany.

She is a graduate of Maryland General Hospital School of Nursing, Baltimore, Md.

Five Nurses Commissioned

Five nurses were recently commissioned in the United States Army Nurse Corps at First Army Headquarters on Governors Island, N. Y., bringing to 61 the total of male and female nurses commissioned from that area since January 1958.

The new Army nurses are 2d Lieut. John C. Cremer, 1st Lieut. Ashley Louise Wilson, 2d Lieut. Monica B. Crossdale, 2d Lieut. Marie M. Latchford, and Capt. Kenneth Stuart.

Col. Howard W. Doan, who took office as First Army Surgeon on Oct. 1, commissioned the A.N.C. officers.

For R.N. Health Programs

The Committee on Economic and General Welfare of the American

Nurses' Association is currently promoting health programs for registered nurses, on the belief that hospital employees and those in health agencies are entitled to the same benefits as employees in business and industry.

According to the 1958 edition of *Facts About Nursing*, over 50 per cent of the active registered nurses are married; about 15 per cent of this number are over 50. This indicates that the problems of job placement and length of employment for the pregnant nurse and the older nurse must be considered, in addition to the more obvious health hazards involved in nursing. Fatigue and tension, resulting from the increasingly complex responsibilities the nurse must assume, are other health hazards.

Some basic steps in the direction of promoting R.N. health programs include the basic pre-employment and routine health examinations provisions included in minimum employment standards developed by A.N.A. sections and the inclusion of a provision for health examinations at the place of employment in sample contracts prepared by the A.N.A. as guides for S.N.A.'s in collective bargaining. All of the contracts recently negotiated have contained this provision.

Civil Defense

Reports from State Nurses' Associations on nursing in national defense indicate that they are placing increasing emphasis on preparing to nurse in case of a national emergency. Forty-one of the 54 S.N.A.'s have committees at the state level, 36 of them special committees. Nevada, New Hampshire, and Pennsylvania associations have standing committees, and Louisiana and Michigan each have a joint committee with the state league for nursing.

The S.N.A.'s work closely with other organizations in civil defense planning. Some S.N.A. members serve within the state civil defense department, which, in turn, is often represented on the S.N.A. committee.

Fifteen state chairmen have reported that they or their representatives have attended national and regional civil defense meetings and courses in civil defense.

Low Pay, Long Hours

Hourly remuneration of staff nurses is "lower than the hourly rates for the lowest paid group of industrial workers in nearly half the countries covered," according to a report by the International Labor Organization. The report, discussed by nursing experts from 15 countries meeting recently in Geneva, Switzerland, was based on information obtained from 54 countries and territories and concerned working conditions, pay, holidays, and opportunities of nurses.

According to the I.L.O. report, many countries pay little recognition to the nurse's education, workload, functions, and responsibilities.

Nuclear Nursing Course

The Navy Nurse Corps recently conducted the world's first course in Nuclear Nursing, in which Navy Nurses studied principles underlying radioisotope and mass casualty procedures as related to medical diagnosis, treatment, and nursing care. The purpose of the course was to promote nursing readiness and participation.

Nurses who graduated from the course in December 1958 have been assigned to clinical radioisotope laboratories, operating room suites using radioisotopes, metabolic research wards, and allied disciplines.

Brotherhood Week

February 15-22 will be observed as Brotherhood Week. Sponsored by the National Conference of Christians and Jews, its purposes are the rededication to the basic ideals of respect for individuals and peoples, development of practical steps people can take to promote understanding and realization of these ideals, and the enlistment of people in year-round activities which will build brotherhood.

Theme for the 1959 Brotherhood Week is "Brotherhood for Peace and Freedom—Believe It! Live It! Support It!"

International Students Day

Sixteen foreign students studying at both the bachelor's and master's degree levels at the Boston University School of Nursing took active part in the University's fifth annual International Students Day program, which saluted United Nations Day.

Nursing students from around the globe who participated in the program were Else Gotzsche and Sister Elna Nielson, Denmark; Duangchai Muktaprakorn, Vichien Thavilab, Pian Poonsuvan, Titasarn Somkit, and Lauhachinda Phinya, Thailand; Ruth Lattapiat and Maria Figueroa, Chile; Yolanda Galvez, Guatemala; Marcia Washington, Liberia; Florence Williams and Cecelia Fores, Costa Rica; Wazir Begum, Pakistan; Paroohy Getzonian, Lebanon; and Raija Sudiluoto, Finland.

The students are sponsored by such organizations as the World Health Organization, W. K. Kellogg Foundation, National Council of Jewish Women, and the Rockefeller Foundation. In all, there are 31 foreign students at the school.

New Associate Director

Edna E. Tuffley has been appointed associate director of the nursing service of The New York Hospital-Cornell Medical Center, New York City. Previous to her appointment, Miss Tuffley had been director of the nursing service of North Shore Hospital, Manhasset, N.Y.

A graduate of The Memorial Hospital School of Nursing, Pawtucket, R.I., Miss Tuffley holds B.S. and M.A. degrees in Nursing Education from New York University.

New Procurement Officer

Maj. Sarah W. Bunn, Army Nurse Corps, recently replaced Maj. Isabel Fennon as a member of the First United States Army Nurse Procurement team. Major Fennon has been reassigned to Germany.

Major Bunn was formerly stationed at the Valley Forge Army Hospital. She is a graduate of Bellevue School of Nursing, New York City, and received a B.A. degree from East Carolina Teachers College, Greenville, N.C.

Since joining the A.N.C. in 1941, Major Bunn has served at Army hospitals at Fort Jackson, S.C.; in the Pacific; at Fort Bragg, N.C.; Pratt General Hospital, Coral Gables, Fla.; and Walter Reed Army Hospital, Washington, D.C. She also served in Japan.

As a member of the Army Nurse Procurement team, Major Bunn will tour the First U.S. Army area to tell student nurses, hospital and high school groups about the need for nurses in the Army. She will interview applicants for the Army Student Nurse Program and aid nurses interested in Army nursing to obtain application forms and information.

Major Bunn will be stationed on Governors Island, New York City.

Studies at Western Reserve

Lilli Petschnigg, assistant director of the Nursing Bureau, League of Red Cross Societies, has received a scholarship from Western Reserve University, Cleveland, Ohio, and is now undertaking one year of academic study in nursing education at the university. Her studies are sponsored jointly by the League of Red Cross Societies and the American National Red Cross; St. Barnabas Guild is providing living quarters for her.

Miss Petschnigg, an Austrian citizen, has initiated home nursing programs in 37 Red Cross societies through conducting instructor training courses, assisting with plans for instruction, and aiding in translating instructor's guides and textbooks. She also assisted in the organization of the Trained Nurses' Association of Austria.

A team—nurse, physician, social worker, and dietitian—at the University of Oklahoma Medical Center worked together to develop a plan of

Comprehensive Care *for the* *Rheumatic Heart Patient*

by **ROSA CORRIE, R.N.**
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A PATIENT with rheumatic heart disease is not only one with a diseased heart; he is a person with multiple problems who needs understanding and guidance to help him face the future as an accepted member of society. It must be possible for him to function within his physical limitations and fulfill his own emotional needs. No one can do this alone; he must have help in accepting the reality he must face throughout his life.

These goals can be reached only through comprehensive planning and care, which demand recognition on the part of each member of the health team that all members are working toward a common goal. Only through their combined efforts can they achieve this type of service which in expertness and insight will go far beyond anything they can accomplish separately.

To illustrate how some of these goals may be accomplished through teamwork, we shall tell you about a boy whose serious problems began with rheumatic fever. He was referred by his local physician to the University of Oklahoma Medical Center, where a plan for a way of life for him was formulated.

Joe, an 18-year-old high-school student was born and raised near a small town in Oklahoma where his father is a farmer. His family lives in a four-room house on rented property. His father, 52, has hypertension and heart disease which have prevented him from having continuous employment; his mother is 50 and enjoys good health.

There are eight siblings; two brothers, one 13 and the other who is Joe's twin, are both well and live at home. Of his six sisters, ranging in age from 15 to 24 years, only the youngest still lives with the parents. An older sister died in 1949 in this hospital with rheumatic heart disease. One married sister was told by her physician that she too had a heart damaged by the disease.

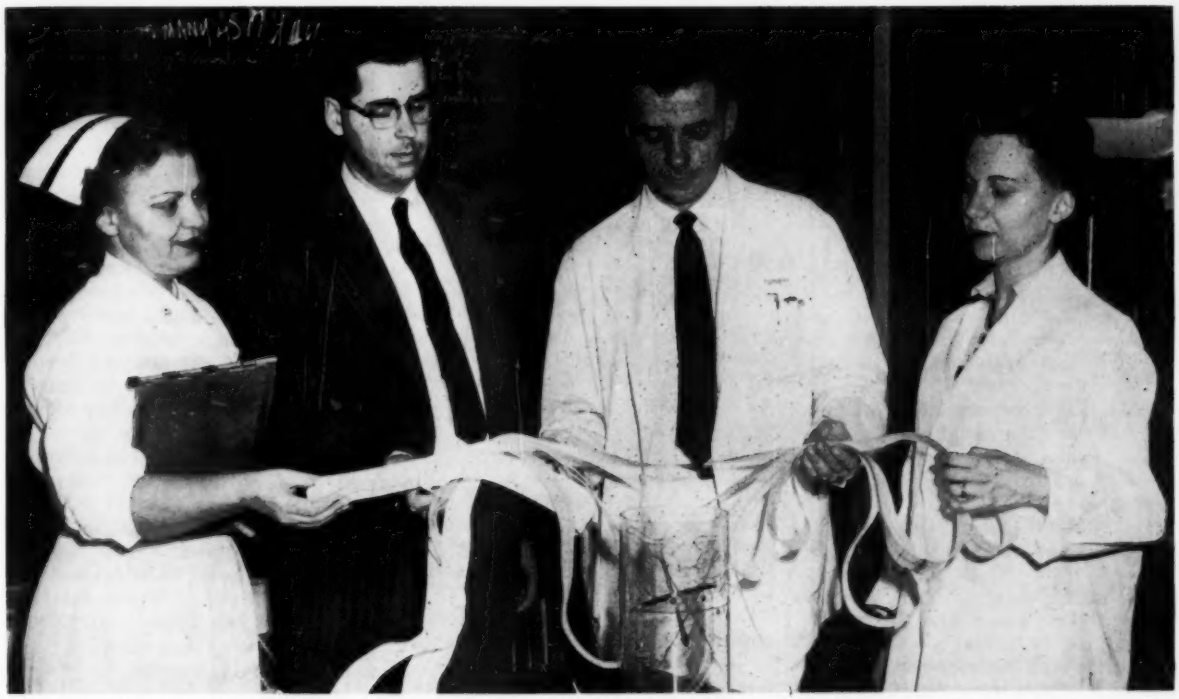
Brought by Parents

Joe was brought to the out-patient clinic by his parents. He appeared to be an asthenic boy, quite concerned about his heart condition, but not in immediate distress. He was alert and co-operative in relating his history but reticent about volunteering any details unless specifically questioned.

Joe had the usual childhood diseases and has had a squint of his right eye since birth; he sees only the outline of objects with this eye and has diplopia on close vision. Although this has bothered him since he started school, no correction has ever been attempted.

When he was 13 years old, the boy became quite ill with swollen knee and ankle joints, accompanied by fever and intense pain. Joe's local physician diagnosed his illness as rheumatic fever, gave him "white pills," and kept him in bed until all joint symptoms were gone. This, Joe recalls, took about one month.

At this time the consultant nurse for



The four authors meet in the medical conference room of the University of Oklahoma Medical Center to discuss the preparation of this article. They are, from left to right, Rosa Cerrie, R.N., Armin L. Saeger Jr., Jack D. Welsh, M.D., and Lucille Sommer.

the Oklahoma Commission for Crippled Children visited their home and encouraged Joe's parents to bring him to the University of Oklahoma Medical Center for evaluation and care. His mother, though not completely opposed, left the decision to his father, who decided against it because he felt sufficient help was available in their local community.

Joe began to feel better and was able to attend school for two more terms without difficulty. But three years ago, when he was 15, Joe began to notice shortness of breath on exertion. This has continued progressively until now. He can walk no more than three blocks or climb one flight of stairs without resting. He sometimes has shooting pains in his left chest. During this interval he has gone to see his physician infrequently.

Before the close of last year's school term, Joe developed a cold characterized by sore throat, chills, fever, rhinorrhea, and cough. His teachers encouraged him to come to the hospital then and be evaluated, but he did not do so.

Joe's physician prescribed daily use of digitalis but this myocardial stimulant did not control his dyspnea. He continued to do some farm work with his father's encouragement, even though this work left him completely exhausted. He likes basketball and baseball but hasn't been able to play for about three years because of dyspnea.

Joe's twin brother became so worried about Joe's "panting" more than usual that he persuaded his mother to take Joe back to the physician. This led to the boy's referral to the University of Oklahoma Medical Center. The Oklahoma Commission for Crippled Children will finance treatment here until Joe reaches 21. Meanwhile, Joe, who enjoys school and makes good grades, hopes to graduate this year. He has no particular plan following his graduation, but thinks he might do farming.

Examination

Joe was first examined in the outpatient clinic, diagnosed as having rheumatic heart disease, and admitted to a medical ward for evaluation care. The electrocardiograph, X-rays, and fluroscopy showed Joe had generalized cardiac enlargement with right and left ventricular hypertrophy and marked left atrial enlargement. The physical findings completed the diagnosis of rheumatic heart disease with aortic insufficiency, aortic stenosis, mitral insufficiency, and mitral stenosis.

Joe's blood count and urinalysis report were within normal range but a throat culture grew alpha streptococci, and the anti-streptolysin titer was 250 units. This test measures serum antibodies to an antigen of Group A Streptococcus. During the past few decades, the relationship between Group A Streptococcic infections and rheumatic fever has become firmly established. The antibody titer becomes detectable the second week after infection and increases until a maximum is reached within four weeks.

With these factors known, the plan for future care began to be formulated, and members of each discipline started to assume their roles in this plan. It was decided that Joe's medical management would concentrate on complete bed rest, redigitalization (because this has been inadequate), penicillin therapy to treat the streptococcic infection, and a sodium-restricted diet.

The physicians and nursing staff made sure that all procedures were spaced to avoid unnecessary disturbance and stress, and to prevent Joe's expending too much energy. Everyone put stress on supportive help so that Joe might be encouraged to express his feelings about the interruption of his ordinary life. This was a real challenge because even casual conversation was difficult for this shy and withdrawn young man.

The diet prescribed for Joe was limited to 1,000 mg. of sodium daily. Since a sodium-restricted diet involves some changes in eating habits, we had to prepare Joe for these changes and enlist his support in making the diet successful. To do this, the dietitian visited Joe soon after the physician ordered the diet and briefly discussed with the boy the part a sodium-restricted diet would play in his care. She explained that salt is nearly half sodium and that the body's sources of sodium are food, water, and medicines. He was

told that his body was retaining some of the sodium normally excreted, and that the sodium was in turn holding water in his tissues. Using simple illustrations, such as showing Joe how a salt shaker becomes clogged in damp weather and how a cracker becomes soggy, the dietitian helped him to understand that sodium retains moisture. She emphasized that a sodium-restricted diet is common, that although the diet is limited in sodium, it contains all the foods necessary for good nutrition. The dietitian then made plans to talk with Joe the next day and asked him to think of questions they might discuss.

On her return visit the dietitian answered Joe's questions and gave him a copy of the 1,000 mg sodium diet he was to follow, instructing him on how to select his food each day from the hospital low-sodium selective menu. The purpose of this menu is to stimulate the patient's interest in the diet, to make his meals more pleasant by providing a choice of foods, and to help him learn what may be included in his diet. Although Joe appeared receptive to the instruction and learned to select his own diet, he offered very few comments about the food or the diet.

Soon after Joe's admission, the social worker began informal discussions with him. They talked about his vocational plans—it was no longer medically possible nor advisable for Joe to continue his plans to be a farmer. Arrangements were made for Joe to continue in his senior year in high school with bedside lessons with the hospital schoolteacher. Through the co-operative efforts of the social worker and a hospital volunteer, a typewriter was obtained for Joe to use. (When Joe was discharged, the husband of the volunteer paid for the typewriter and gave it to Joe to take with him.)

Joe's Worries

There seemed to be two major problems worrying the patient. First, could anything be done about his eye? We found that eye muscle surgery would be considered when his cardiac status allowed, and he had this to look forward to. The other question was whether he could ever have surgical repair for his heart; he had been told this procedure was now being done. The cardiologists were not encouraging, but since he did have an opinion from them, he could accept this and hope for improvement in his condition.

Those caring for Joe began to realize he was passive and co-operative about his regimen but seemed unable to talk about many of his feelings; we felt that he did not really understand anything that was happening to him. Furthermore, the ward personnel were unable to develop a relationship that could afford real support. A married sister visited him each night and his parents visited each weekend.

The first few contacts the social worker had with Joe showed him to be equally unresponsive, but this changed once he brought Joe some handicraft equipment and games. Joe seemed to respond immediately to the special interest, and his ability to participate in these diversional activities encouraged him. They were used as starting points for conversation, and gradually Joe began to express himself more freely to everyone.

It was now felt by the cardiologist that the multiple valvular involvement and the very large heart indicated some smoldering rheumatic activity was still present. The doctor prescribed Meticorten daily and bed rest for him was extended for an undetermined period. The plan of treatment called for regular checks on his heart size and keeping him on this therapy for as long as needed to arrest the chronic low-grade activity.

Because of the extensiveness of his past problems, plans for leaving the hospital were begun early as a part of his long-term care. At that time the possibility of convalescent hospital care for three to six months was discussed. Joe and his family strongly rejected this and even considered leaving the hospital immediately. The next choice we had to consider was home care.

Interviews with the parents indicated they were unable to give much emotional support to medical planning, hospitalization, or financial care. His mother prayed constantly for Joe's immediate return home and believed her prayers would be answered. The father especially seemed to have no real understanding of Joe's condition; he felt only lazy people could stay in bed, but persons like himself,who were ill but not lazy, could not stay in bed even with medical advice.

However, the mother could no longer go along with her husband's feelings and became more insistent in doing what the physicians asked. She was made aware again of rheumatic fever's propensity toward occurring in the same family, and through the social worker's encouragement she brought the two younger children to the Medical Center for examinations. The results were negative. Joe's twin brother, who is an active athlete, refused because he feared he might have a disease and not be able to qualify for an athletic scholarship to college.

During the third week of hospitalization, Joe began to have periods of increased pulse rate and a progressive gain in weight. Throat cultures again grew Alpha Streptococci even though penicillin dosage had been increased. Repeated blood and urine cultures were negative, but the sedimentation rate rose to 22 and the A.S.O. titer was 838 units. The Meticorten dosage was therefore increased. Sedimentation rate is a well established index of rheumatic activity. This test depends upon changes

Social worker Armin Saeger looks on as Doctor Hughes, medical resident, and Miss Cosby, head nurse, discuss with the patient the amount of schoolwork he may do.

in the composition of the blood that occur in rheumatic fever as well as other diseases. Successful suppressive therapy is accompanied by a progressive decline in the sedimentation rate. A failure to decline or an increase in the rate indicates that the disease process is not adequately controlled.

Joe's membership in the Future Farmers of America Club gave the social worker an idea. He told the club of Joe's problem and the club undertook the project of securing a television set for their ailing member. Joe received the set during a formal presentation which was publicized in his home town, and the boy modestly enjoyed the publicity.

By the end of the fourth week Joe was feeling better; his heart was better compensated, he had lost edema fluid, and the sedimentation rate and A.S.O. titer had returned toward normal. To alleviate the monotony, he was allowed to sit in a chair for 20 minutes daily, and this was tolerated with no increase in pulse rate. He was also allowed to do some typing for pay during this time. The social worker felt this was a tremendous boost for his morale.

Looking forward to the time when Joe would leave the hospital, we began to arrange through the State Department of Education for a teacher in his community to give home instruction to Joe, and through the county Department of Public Welfare, we were able to secure Aid to the Disabled assistance.

During his sixth week of hospitalization, although there had been very little decrease in heart size, his weight remained stable and the sedimentation rate and A.S.O. titer continued within normal limits. Modified bathroom privileges were granted to determine how he could tolerate this, because it would be similar to the planned home care problem. There seemed to be no change in his cardiac status with this small amount of activity. Plans for continuing his care at home were now ready for completion. It was still difficult for his family to accept the fact that Joe would have to spend many weeks in bed even though he looked and acted better.

In the nutrition clinic room, the nurse makes use of plastic food models in demonstrating to the rheumatic heart patient how to plan attractive low-sodium meals.

Positive Approach

It was decided to instruct Joe using the positive approach. He was told what he *could do* at home, since he needed to assume much of the responsibility for following medical recommendations himself.

A hospital bed provided by his local American Legion Post had been placed in the living room so that he could be in the midst of normal family activity. He could walk to the bathroom when he felt like it, but a bedside commode was made available in case he needed it. His family had improvised this using a chair and bed pan. Joe was permitted visitors if he avoided excitement or exposure to respiratory infection.

Joe could do his school assignments and enjoy such passive recreational activity as reading and some quiet handicraft games. He would also be able to watch television. Before discharge from the hospital, Joe and his mother were instructed on how to follow the 1,000 mg. diet at home. A history of Joe's past nutrition was taken and this information was used to adapt Joe's diet to his home situation. Where possible, foods produced at Joe's home were included in the diet. Labels from cans and packages were used to show Joe and his mother how to read the contents to determine whether salt, soda, sodium, or sodium compounds were included.

The use of salt substitutes other than seasonings and methods of food preparation were discussed with Joe and his mother. Joe's mother was told that much of his food could be prepared with the food for the family and his serving taken out before salt was added. She was also given recipes to be used in his diet. Plans were made by the dietitian to see Joe and his mother on his return visit to the clinic.

Both parents were instructed carefully on the importance of keeping him on the medications—digitalis for cardiac stimulation, penicillin for combating infection, Meticorten for its antirheumatic and anti-inflammatory properties.

Joe's parents were asked to bring him back to the out-patient clinic for monthly examinations which would determine whether his need had changed. When he returned in one month, after carefully following his regimen, Joe's physical status had not changed. Meanwhile, he had received his first check for $58 from the A.D. and his monthly medication bill of $40 was being paid by the Oklahoma Commission for Crippled Children. Also his home had recently been electrified by the Rural Electrification Administration.

When the dietitian talked with Joe and his mother, she found that they had been following the diet very strictly, despite the father's feeling that it was unimportant.

Joe states that as a result of his illness, he spends much time reading the bible and has an intense interest in becoming a missionary. He anticipates graduating from high school this spring.

Change in Attitude

There has been some evident change in the family attitude regarding medical treatment, a change particularly evident when Joe returned to the hospital because of an attack of nausea and vomiting and pain in his shoulder. He was rehospitalized for five days. At that time, all laboratory findings were essentially negative. He was discharged with the same recommendations as before and will be followed as an out-patient with treatment as indicated.

Americans are investing money, time, thought, and energy in their battle to overcome heart diseases, which reportedly are responsible for over half the deaths in this country. It is important that the nurse be aware of new developments and changing emphasis in the field of heart disease so that she can best promote the health of the public.

WAR *against* Heart Diseases

by **MYRTLE H. COE**
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THE American people have continued to invest considerable money in both public and private funds for the improvement of health in the United States. The principal killers have received the concentrated attention of each generation, often with spectacular results in disease control. At present heart diseases account for over one-half of the deaths in our country, and it is therefore logical that tremendous effort be exerted to understand these diseases better in order that a program of prevention and more successful therapy may be developed to save the lives of many who are now dying during the years of middle life. It is frightening to read death notices and observe the number of male deaths during the sixth decade of life, contrasted with deaths of females who are predominantly at least one to two decades older.

The American team is composed of three groups of people: (1) the private citizen who accepts the privilege and opportunity of supplying the tremendous funds necessary to undertake such a health battle, (2) the research worker who is willing to devote a lifetime to the painstaking investigation of some limited aspect of the problem, and (3) the clinician who translates the findings of the investigator into medical practice to the ultimate benefit of those whose money made progress possible. And the nurse also plays a significant role. It is she who has an excellent opportunity to keep the public informed of the need for financial resources, of the work being done by the American Heart Association and the National Institute of Health to promote more adequate prevention and treatment for diseases of the heart. She can also tell them the reasons for new methods and technics being used in clinical medicine.

It therefore is essential that each nurse keep abreast of scientific and medical developments through reading nursing and medical journals, attending in-service educational programs and special courses arranged by professional organizations, and through continuing her study at colleges and universities. The medical staff are always happy to explain and suggest sources of information to help the nurse interested in understanding the why's of everything she does.

New knowledge and understanding of scientific truth comes through a slow and painful developmental process. The first findings of new information must always be subjected to widespread and vigorous testing and retesting. Only then can they be accepted as scientific truth upon which new clinical practice may be established. It is for this reason that scientists become seriously disturbed when they see the national and international publicity given a brand-new idea immediately upon its preliminary announcement at some scientific or medical meeting. False hopes may thus rise in the hearts of many people throughout the world. Years of further study are usually required for the verification, refinement, and delineation of the specific limitations of any new finding before it is ready for public consumption.

It is therefore not surprising that during the past several years of research in the field of heart disease our knowledge has not gone forward at a constant, uninterrupted pace. Some ideas which seemed sound when first developed have seemed less complete or accurate upon more thoughtful and intense investigation. It is important that nurses be aware of such changing emphasis in order to promote the best possible health of the public. A specific example of such changing ideas is concerned with fat content of the diet and its relation to coronary heart disease. For a time, the opinion was held by certain investigators that only cholesterol was a dangerous element of the diet. A little while later fats in the diet seemed to be etiologically significant. Some scientists are now suggesting that a high content of protein is as dangerous as a high content of fat. More extensive study of this possibility has raised several questions and brought forth more specific information. For example, the total caloric intake seems to be of greater significance than the specific fat or protein content; and unsaturated fats, which are those occurring naturally in plant life, seem to be no more inclined to produce atherosclerosis than any other food element. It may also be very possible that the metabolisms of some people can handle animal fat without predisposing them to arterial disease. As a result of the present incomplete state of our knowledge on this subject and because a drastic change in the present balanced diet of the average American citizen might well cause a greater threat to the nation's health than the one which it would attempt to remove, the American Heart Association urges a diet of the usual composition but within the total caloric requirement for each individual. Obesity seems to be the greatest foe of good health; perhaps future discoveries will give us more specific knowledge upon which to base our dietary habits.

In reviewing questions related to heart disease which have received greatest emphasis during recent years, con-

sideration can be given to several areas: etiology, prevention, diagnosis, and therapy. The fruits of the scientist's labors have varied among these several fields and among the several forms of heart disease.

The causes of hypertension and of coronary heart diseases have received major attention from research workers. There have also been studies to determine what factors increase the tendency of blood to clot in the circulatory system. Special investigation has been directed to the possible significance of such factors as diet, emotional stresses, smoking habits, levels of enzymes in the blood that control metabolic processes in the body, and blood levels of certain substances as, for example, cholesterol. Experimental work has been done on animals by some research workers, while others have studied the above factors in families and national groups in the search for any correlation between these factors and the incidence of heart disease. At present there are no answers. However, clues have been found which we have every reason to believe will provide specific information in the future.

Prevention

A successful program of prevention is based upon an understanding of etiological factors which can be controlled either by public health or personal health programs. Since it was discovered that rheumatic fever, with the permanent heart-valve deformities it frequently produces, is a result of some streptococcic infection, such as acute streptococcic sore throat or scarlet fever, the American Heart Association has been able to recommend a specific program of prophylaxis to prevent recurrence of streptococcic infection in people susceptible to rheumatic fever. A similar program of prophylaxis has been recommended to prevent the invasion of the blood stream by streptococci followed by subacute bacterial endocarditis in those persons who already have an acquired or congenital disease of heart valves.

In order to prevent recurrence of coronary thrombosis, many physicians are making long-term use of anticoagulant therapy for those patients who can follow the close medical supervision required by those receiving anticoagulant drugs. The perfect anticoagulant for this purpose is still being sought; several coumarin compounds and phenindione are now being used but there are disadvantages associated with each.

Diagnosis

Although clinical measures used in studying the anatomy and physiology of the heart (both healthy and diseased) have included study of pulse rate and quality, heart rate and sounds (sphygmography), radiological study of the heart's size and shape (conventional radiology and fluoroscopy), and the electric currents produced during heart action (electrocardiography), these are not adequate to provide the information needed for prevention or adequate treatment of many forms of heart disease. A method of studying the coronary arteries by injecting opaque dye into the aorta in the right place and at the right moment is now being developed with considerable promise. If some method of examination could inform the physician that a person's coronary arteries have undergone changes which seem to predispose to coronary thrombosis, even before he has developed any symptoms of severe changes, a preventive program would be more useful than is possible at the present time.

As surgical treatment of selected patients with congenital or acquired heart conditions continues to develop, the importance of very accurate means for diagnosis in a most specific and detailed fashion becomes paramount. Therefore, better diagnostic methods are essential to continued progress in the conquest of heart disease. A number of procedures are being used in research centers including cardiac catheterization, ballistocardiography, vectorcardiography, electrokymography, phonocardiography, angiocardiography, ventriculography, and the determination of the blood levels of certain substances, including cholesterol and significant enzymes. At present, cardiac catheterization has become a diagnostic procedure of such established method and clinical significance that it is being adopted in hospitals outside of research centers. It is an essential aspect of the work-up of any patient scheduled for cardiac surgery and will therefore be found in use wherever cardiac surgery is to be done. Nurses will consequently become increasingly involved in this procedure.

Although there is still much more to be learned about the significance of all the information given by the ballistocardiograph, this method of studying the heart is sufficiently simple from the patient's point of view and is proving to be of such value to the cardiologist to suggest that it, too, may soon be found outside of research centers, in our larger hospitals. It is used especially in the study of coronary heart disease and may prove useful in detecting preclinical arterial disease. This technique supplies information about the total performance of the circulatory system by measuring the movements of the entire body as they result from movements in the circulation.

The need to find more successful means of therapy has promoted accelerated study in the fields of both medical and surgical treatment of heart disease. The surgical correction of congenital abnormalities in cardiac structure has progressed with satisfying results. Surgeons with this specialized skill are increasing in number, and this type of surgery will be performed in an increasing number of operating rooms. This means, of course, that an increasing number of nurses will need to become familiar with and skilled in the care of patients during the periods of preoperative study, operative procedure, and postoperative recovery.

The greatest problem of cardiac surgery was solved with the development of the pump oxygenator which has made it possible for a mechanical device to replace both the heart and lungs in providing the body with a continuous supply of oxygenated blood during the period of surgery. Now the surgeon can open the heart and clearly visualize the defect and its surgical correction. Surgical correction of septal defects and of valvular stenosis are the most common surgical procedures at present, but no doubt methods for helping patients with valvular insufficiency and with incorrect position of the great vessels will be developed in the future.

A mechanical device to replace the pacemaker of the heart when that structure no longer functions is a spectacular new development. This is truly a life-saving device and is one of the more dramatic achievements of recent years.

Treatment of health-threatening hypertension has been attempted by both surgical and medical means. Because surgical treatment has not been altogether successful, much effort has been made to find drugs which would diminish the hazards of this condition. Drugs to lessen vasomotor stimulation and to increase the elimination of sodium from the body have received special attention in the research field. In the first group are the rauwolfia alkaloids, protoveratrine, and hydralazine; in the second is chlorothiazide. For many years mercurial diuretics have been effective in preventing sodium retention by preventing its reabsorption from the renal tubules, but the toxicity of mercury and its required parenteral administration have prevented its use for long-term therapy. Chlorothiazide seems to be an answer to the hope of finding a non-mercurial drug with the same ability to prevent reabsorption of sodium from the tubules. It is therefore being used to enhance the action of other hypotensive drugs in the case of patients with malignant hypertension. It is also used to treat heart failure. In very severe hypertension, agents which block impulses from being transmitted

(*continued on page* 34)

A diagnosis of heart disease is often a frightening experience for a patient: Does it mean immediate or impending death? To what extent will it limit his activities, change his living pattern? The nurse has the opportunity—and the obligation—to help the cardiac patient adjust to his new life.

Emotional Needs of the CARDIAC PATIENT

The nurse should realize that the patient's initial unreceptiveness may be due to his concern about himself and his illness. She should try to be patient with him.

by **FLORENCE C. ELLIOTT, R.N., M.N.A.**

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ON A BRILLIANT black and red booklet cover blares the startling title "No. 1 Killer—Heart Disease." The caption under a news photo of a smashed mass of steel and chromium reads: ". . . driver suffered heart attack, causing accident." With so many vivid accounts impressed upon our population, there is little wonder that next to TV Westerns and juvenile delinquency heart disease is a common topic of conversation. Although some emotionally charged publicity serves to open purse strings for financing much needed research, other accounts about heart disease may also excite, threaten, and terrorize individuals—particularly a slightly insecure person who has recently been informed about his heart trouble. Perhaps the awe and intense interest so easily aroused in most people stem from fear rather than positive attitudes.

Each person's feelings about heart disease arise from his previous experiences or exposures to it: the reports he has read in the newspaper, the pictures or TV stories he has seen, the people with heart disease he has known or heard about. His reaction to heart disease in general is governed by his personality, maturity, adjustment to life, religion, and philosophy. All these things make one person different from another.

Since there can be infinite variations between the experience and heredity of one person and another, there can be just as many variations in the reactions of people to findings of heart disease. Some people associate heart trouble with impending death; they may recall the dramatic moment in a stage thriller when a strained voice choked out the line: "His heart's still beating!" Or another scene where someone bends to listen for a feeble sound of a beating heart only to hear nothing. It seems quite logical that when the heart stops beating a person dies. This has been rooted deeply in the minds of men for centuries, and rightly so. However, scientific advancements can sometimes fool common sense. It is interesting to recall a question raised by a lay person concerning the use of the pump-oxygenator, or heart-lung machine, in open

heart surgery: "If this machine does the work and the heart isn't beating, then isn't that person dead?"

Even a frequently used medical term can become a misnomer as far as common sense is concerned. Such may be the case when the physician informs his patient that he has congestive heart failure, going on to explain the therapy. Many times the patient gets left back at the term "heart failure" and can comprehend no more. Heart failure, he thinks, must mean that the heart fails; if the heart fails, it stops; if the heart stops, the person dies; therefore "heart failure" means "death." Just how this term can be applied is a delicate situation indeed.

A patient's adjustment to heart disease will depend a great deal on his usual reaction to stress situations and his total adjustment to life. As a rule, there is a difference in the attitude of a patient with slowly approaching cardiac involvement, such as in hypertensive and rheumatic heart disease, and a patient who is suddenly afflicted with an acute cardiac condition, such as a myocardial infarction. With a gradual onset, the patient can plan environmental changes, consider business and financial adjustments, and develop less strenuous activities in his daily life. He can absorb his physician's advice about his particular condition and gradually learn how to live with his heart disease. Of course, heart disease that is slow to develop does not guarantee good adjustment either.

The patient who has a coronary attack, however, may experience greater stress in a shorter time span. He will have rapid adjustments to make: One moment active and busy, a person may find himself helplessly inactive the next moment with weeks of convalescing ahead.

Run the Gamut

The emotions of a patient with heart disease can run the gamut. Some people will awaken in the middle of the night and feel their hearts beating furiously or notice, in a state of apprehension, that their hearts miss beats. They may find it difficult to accept their physicians' negative physical findings. Others will have severe anginal pain but refuse medical attention with stoic pride. In other instances, patients with previously known heart disease will develop pronounced symptoms of cardiac difficulty when involved in an emotional upset. Woven in the web of heart disease are both physical and psychological symptoms and both need treatment.

There is the situation of the man with pain so acute that in retrospect he recalled, "I was wishing that the good Lord would take me then and spare me the suffering." Nor does the degree of intelligence or education a patient has protect him from strong emotional involvement. Everyone has feelings. In one instance a highly educated man suffering from a coronary thrombosis persisted in crawling out from under his oxygen tent and pacing about his room. Why should he stay in bed and follow the doctor's advice? he wanted to know.

He recently had a friend with the same ailment who conscientiously followed his prescribed regimen only to drop dead the day he returned home from the hospital. This patient went on to express his desire to start running as fast as he could until he too collapsed. On the other hand, consider the patient with rheumatic heart disease whose enlarged heart was first noticed through a follow-up X-ray from her county Tuberculosis Association's mobile unit. She waited anxiously for the physician's interpretation of her X-ray, fearful of a long separation from her family. Her reaction to a diagnosis of heart disease was, "Thank goodness I don't have tuberculosis!" It is evident that although some people fear cardiac trouble, there are others who accept it as "just another one of those things." An observer should guard against reading his own feelings into another person's reaction.

It is apparent that some individuals can comprehend new situations with a considerable degree of rapidity and accept their place in it readily; they are soon equipped with plans for reconstruction in their patterns of living with a minimal amount of guidance and support. A great number of people have developed inner strength to meet stress situations and make adjustments. But there are those who find such transitions a difficult struggle. They have ambitions, pride, goals, and hopes to which they longingly cling. And there are a few who, even with expert guidance and the best medical therapy, never can accept a different way of life called for by heart disease.

It is normal for a patient with an acute illness to be concerned mainly with himself: His survival is foremost in his mind, he is fighting for his very existence. At this time, the nurse, too, is involved with the patient's physical care. She helps to relieve pain and give him physical comfort—and by so doing, will give him psychological comfort also. The patient's concern with himself may make him extremely sensitive to minute details that affect him physically. Creases in linen or the largeness of a pillow can be very distrurbing. He is extremely irritated at the warmth of broth or a light shining in his eyes.

He may react to the presence of concerned friends, relatives, or medical personnel with indifference or hostility. Carts rattling down a corridor, bells or buzzers sounding, people talking, a radio tuned to soft music—all may be distressing to the patient who sees his life threatened by illness. He may be upset by a nurse with a sharp or coarse voice, someone who surprises him by entering his room without some subtle announcement, or by a nurse with a rushed, harassed appearance or awkward movements. The nurse may find it difficult to accept the anger or the indignation a patient expresses, but she must try to understand the feelings beneath such outbursts. The patient may resent his illness, or perhaps the stress of heart disease has brought out feelings he has suppressed for years. The nurse should be aware of her own reactions to a patient's anger and be able to cope with both her own and the patient's emotions.

Once the patient has become adjusted to her illness, the nurse can help her plan for her return home, with advice on energy-conserving methods and homemaking aids.

Perhaps one of the most detrimental effects a nurse can cause is the transmission to a patient of her own fears. For a nurse to be sensitive to a patient who fears death and to provide him comfort, she must know her own feelings about death and the purpose of life. On the one hand, she needs to be realistic in facing a person's chances to live. On the other, she must give the patient hope and confidence in his care; a patient who has a poor prognosis needs to be assured that he is getting good nursing care and medical treatment. Here the nurse cannot give the patient false hope with a rosy picture of a sure, swift cure and a healthy long life for years to come, but she must always have some hope for a patient to grasp. She can in many ways—through expression, movement, tone of voice, and genuine interest—let the patient know that he is not alone in his struggle for life.

Religious help at this time is comforting to many patients; to others spiritual counsel may be vigorously rejected as a sure sign of defeat. A nurse with a sound philosophy of life and an understanding of death can have empathy with an acutely ill patient and give him confidence to face the future, whatever it may bring.

Sometimes a nurse feels that she should know some "magic words" to say to a patient that will reassure him. Perhaps just her presence, her genuine interest in his well-being, will do more to reassure the patient than words from classic literature. She can often help the patient most by her willingness to listen to him and her recognition and acceptance of his underlying feelings.

Different Situation

When the nurse is caring for a patient with a long-term cardiac problem, she is faced with a slightly different situation. Many times a nurse cares for patients with severe heart disease and sees them "on the downhill grade." Long before a patient shows any signs of acute cardiac involvement, the nurse may slip into the "too bad" attitude, sadly shake her head, and see dark clouds gathering on the horizon. Here, again, the nurse must take a realistic view of what is ahead for the patient with heart disease. She needs to know the many aids that are available to provide the cardiac patient longevity and a worthwhile, pleasant life.

Perhaps one of the unexpected blessings from President Eisenhower's successful recovery from a myocardial infarction is the example he has set for so many who have been similarly afflicted. One may recall a photograph of the President stretched out on the golf course relaxing and chatting with his companions before completing their game. He has proved that life does not stop with the advent of heart disease; there are still many pleasures left for a rich, productive life with appropriate measures of moderation.

When a patient with heart disease is convalescing, his thoughts turn from pre-occupation with himself to the conditions about him. He becomes concerned with the welfare of his family and his job, and may recognize that with heart trouble, he will probably have to make some changes in his manner of living. In caring for the convalescing patient, the nurse can get better acquainted with him and talk with him about his home, family, or business, provided, of course, the patient feels like talking. She can listen to him express his feeling about assuming his occupation again or his plans for returning to a more active life.

With an interested but uninvolved listener at hand, many patients can freely discuss their feelings and uncover the real issues confronting them. The nurse must be aware of expressions and mannerisms that indicate anxiety and accept them for what they mean to the patient. She can recognize that a patient's refusal to comply with prescribed therapy is a refusal to accept his illness, and she can identify undue gaiety, severe depression, morbid silence, irritability, and defiance as defense mechanisms which the patient feels he must use to face life.

Many times the nurse will find the patient's adjustment to heart disease dependent upon the happiness and usefullness he experiences outside the hospital or therapeutic environment. Long periods of depression may be observed in the young, unmarried adult patient who feels like a "fifth wheel" in domestic society. Career goals and ideas of success may be completely shattered. There may also be a great deal of psychological over-lay in the middle aged woman whose children have left the parental home. She may find little to look forward to in being an "invalid" in an empty house or in lacking the stamina to bury herself in a deluge of community social life. Sometimes the elderly patient, widow, or widower may see little in the future to inspire him: The additional burden of caring for an inefficient heart may be the straw that breaks the camel's back.

It seems that if a patient is emotionally upset while he is ill, it is difficult to teach him how to care for himself. If he is worried about supporting his family, getting a job, or paying hospital expenses, it is not reasonable to expect him to concentrate on developing interesting hobbies. Nor can one expect a hospitalized mother with heart disease to absorb detailed instructions about a low-sodium diet when she wonders how her children are, what condition their clothes are in when they go to school, what they are eating, or what they are doing for amusement.

A nurse can do a number of things to bring peace of mind to patients concerned with finances and family. First and foremost, she must be accurate in her observations and not create problems where there are none—a few careless words can undo days of considerate attention. Talking with the family may enable the nurse to bring the patient news about the well-being of the household, and it may help the family to plan effective management of existing problems. Burdening the patient with family problems is to be avoided, but letting him in on the planning is a step forward in his convalescence.

The use of housekeepers may be helpful when they are available. Furthermore, financial guidance is available to most hospitalized patients through personnel especially trained to discuss these matters; assistance may sometimes be obtained for patients who are distressed by a lack of monetary resources. There is no definite solution to every financial problem, but sharing the situation with others in the family may give the patient needed support. The patient's return to his occupation can be discussed with the patient's physician who can evaluate the extent of responsibility and physical exertion best suited for the patient. The nurse can be instrumental in observing the need for guidance and in co-ordinating the activities of the many paramedical workers.

Community Aids

The nurse should be aware of the community facilities which can assist the patient in his adjustment to heart disease. There are many helpful programs and much informative literature available through the American Heart Association, life insurance companies, private foundations, The United States Public Health Service, and community projects.

For example, in Minnesota there is a newly formed Twin Cities Coronary Club, established as a community service through the Minnesota Heart Association. All the club members have had coronary attacks; most of them have been hospitalized with their heart disease, and all are now recovered and have returned to productive living. The main purpose of the club is to build morale of patients with coronary thrombosis. Members will visit homes or hospitals when an attending physician feels it will help speed his patient's recovery. The members have received instructions about coronary thrombosis from physi-

cians who have also suggested beneficial approaches to patients.

A physician can request a club member to visit a coronary patient to assist him through a period of depression that may follow an acute attack. It is apparent in many instances that visiting with a recovered heart patient is most effective in giving a convalescent patient the will to get well.

The nurse may find such despondency in many patients. Sometimes better knowledge of his particular cardiac damage will help the patient realize how extensive the adjustments may have to be. However, the nurse can help the patient accept a cardiac handicap as one with which he can live, just as people with impaired sight or hearing can live and work with their afflictions. Perhaps the patient needs to know that most people with heart trouble do return to work. Some literature reports that 80-85 per cent of patients with heart disease return to their previous jobs.

Feeling of Inadequacy

The young mother with healthy, active children may feel completely inadequate when she finds herself restricted by an inefficient heart: she may feel she can no longer be a good mother. Her concept of her role at home may need to be re-evaluated. Perhaps she would be aided by hints on work simplification. In some regions, there are courses given on planning and performing housework with a minimum of stress and strain; some courses are especially designed for homemakers with heart disease. The "Heart of the Home" programs sponsored by the American Heart Association illustrate how many household activities can be performed effectively with very little physical exertion, and they emphasize the need to plan and gain family cooperation. The nurse who is familiar with the "Heart of the Home" guidance can assist a mother to find her place once again in the family circle.

Another community service available in several areas is a Work Classification Unit for cardiac patients, the purpose of which is to evaluate the extent of cardiac involvement and the work potential of an individual. The unit employs a variety of trained experts who examine the patient not only for his heart condition, but also to determine his abilities, aptitudes, and emotional state. With physical findings at hand, they can advise the patient about suitable jobs available to him. The unit may also provide follow-up after the patient returns to employment to evaluate adjustments and the suitability of the work he is doing. The unit provides a specific, individualized approach for rehabilitating many patients with heart disease.

Developing new hobbies, such as handicraft projects, can be one of the early steps in convalescence and may provide the patient with many pleasant moments later on.

The nurse is in a position to help the patient with heart disease adjust physically and mentally to his illness. Cardiac patients more frequently than not experience emotional upsets with their illness when it first is recognized. They need support, sympathy, and understanding from the nurse. If she can help the patient work through his situation, rather than merely telling him about it, she may give him tools to use at home and at work to analyze his problems and find solutions. When the patient understands the basis of his illness he can develop his "cardiac sense" and carry himself through varying situations.

Sometimes a patient may lack understanding of his heart disease and avoid entering society with a "crippled heart" A patient may confine himself to bed and resign himself to a dependent life, fearing that any activity at all will cause immediate death. He may live in dread of overexertion. On the other hand, he may highly value strenuous activities of his former days and reject a life without them. Other patients feel so incapacitated and inferior with their heart disease that they employ cardiac symptoms of limitations to get attention. A patient should know and accept his physical capabilities; it is essential for him to understand his positive abilities and to overcome his self-pity. The nurse can help him to do this.

With knowledge and understanding of themselves and the disease, most patients can prevent further cardiac damages. They can learn to live and work within their physical capabilities and enjoy life as happy, productive members of society. They are no longer patients, they are people who have learned how to live with heart disease.

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INTERVIEW with Katherine R. Nelson, R.N., M.A., Instructor In Cancer Nursing, Teachers College, Columbia University

WHAT'S NEW IN CANCER NURSING?

Miss Nelson discusses with Associate Editor Julie E. Miale, R.N., the increased interest in cancer nursing, possible causes of the disease, and tests to detect it.

Q. Miss Nelson, cancer is one of the major problems facing health authorities today and the whole picture of cancer is moving along very rapidly; impressive strides are being made in research and treatment. Is it true that cancer nursing, as a specialized field, is attracting more and more nurses, and is there a concerted effort being made to interest more nurses in this area?

A. Yes, nurses are showing increasing interest in the field of cancer and I believe, happily, they are attracted by the whole new world opening up in the field of research and treatment for this disease. Recent progress in surgery has been phenomenal. Years ago, cancer operations were few, but now practically every part of the body can be subject to surgery. Work with radioactive isotopes also adds another dimension to the concept of treatment with radiation, a fascinating and exciting method that is moving ahead by leaps and bounds.

But unfortunately, because of poor educational practices in schools of nursing, nurses have had a very hazy and limited idea about this area of nursing. Now, thank goodness, they are showing more interest in cancer as one of the major health problems and are taking considerable interest in how they can improve the nursing care of the cancer patient.

Q. You speak of new advances in radiation medicine, surgery, and research—does this mean the nurse must undergo special preparation before she can qualify to work in this area?

A. Not exactly. It is my opinion that a professional nurse is qualified to nurse any ill person back to health. However, I am concerned about the lack of attention given to such ordinary nursing care needs as prevention of pathological fractures, control of odors, and the like. Futhermore, the cancer patient frequently has many and very serious emotional problems. I am afraid that in a curriculum where the student learns surgical nursing she might miss the essential problem of the patient—the cancer. In other words, I feel that the emphasis should be put on the care of the patient as it relates to his cancer, rather than as it relates to his surgery. We must remember that surgery is the doctor's solution to the problem of the patient's cancer; it is not the patient's real problem. We should always realize the major problems are the cancer and its effect on the patient's life.

Q. Nurses are asked many questions about cancer. How much do you think a nurse should know about the disease? Should she be able to classify tumors? Does she need to know the principles governing nursing care of the cancer patient? Should she be aware of signs and symptoms of cancer and be able to give advice regarding cancer clinics and detection centers?

A. Yes, absolutely! If there is anything I deplore, it is ignorance on the part of a nurse who, when asked a simple question, answers, "You will have to ask your doctor," and the ignorance of the nurse who is caring for a cancer patient without knowing what she is doing and why. Many nurses have only a vague knowledge of cancer and its treatment. There are nurses, caring daily for patients who are being treated with radioactive isotopes, who haven't the faintest notion about the precautions they should be taking and the reasons for observing them. Certainly they must make it their job to find out and to learn as much as possible about a subject that is in the limelight constantly, a subject of vital concern to everyone in the medical field.

Q. There are volumes being written today about cancer in lay and professional journals and magazines. Almost daily, newspapers carry reports about some new "powerful antibiotic," a "breakthrough in the cancer fight," the charge that smoking causes cancer or the denial of the allegation, and so on. Since many people are concerned with these reports, they frequently turn to nurses for information. What do you think should be the nurse's general attitude in replying to questions put to her on the topic of cancer, especially when she herself does not feel on firm ground and does not have authoritative information?

A. It is impossible to have all the answers, for I, myself, find it almost impossible to keep up with all the material appearing every day on cancer. There are so many new articles written on the subject; but then, some are repetitious. I think a nurse has to maintain a kind of tongue-in-cheek attitude about all reports unless they come from legitimate sources and are supported by facts.

Cancer is a complex problem being studied from many angles. Today there is a growing opinion that cancer has not one, but many, causes. To a large extent, these causes may include part of the biological make-up of the individual or a long-standing developmental process. Again, it might be caused by a virus or traced to factors to which man is exposed in his daily life because of his job, environment, or habits.

Is there special preparation required for cancer nursing?

How can the nurse help in controlling the spread of cancer?

What is the most challenging area in the care of cancer patients?

During the summer session Miss Nelson is a special lecturer at the School of Public Health of the University of North Carolina.

So you see, it is not always easy for a nurse to answer these questions. However, a nurse who is intelligent and qualified should know where to draw the line between accuracy and too-eager or too-poor reporting. She should certainly know where to turn to obtain accurate information of this subject.

Q. Miss Nelson, to get to a specific question and one constantly being asked of nurses: What do you think about cigarette smoking and cancer, does smoking cause cancer? What is the answer to the question, and what can the nurse say in view of our present knowledge?

A. What we must remember is that the statistics relating to cancer and smoking are arrived at by association. Therefore these statistics do not prove that cancer is caused by smoking. The nurse can say, for instance, that there is conclusive evidence smokers are running a risk by smoking; she cannot say cancer is caused by smoking. She can say there is a large block of evidence indicating that if a person smokes three packs of cigarettes a day, he is running a higher risk of developing cancer than the person who does not smoke at all. And, if we remember that the Surgeon General of the United States Public Health Service and the Ministry of Health in England, in whose hands rests the responsibility for the public health of the United States and England, went on record in 1957 and warned the public about the risk of cigarette smoking, then I think the nurse, too, can and certainly should warn people about smoking.

Q. What would you say about the report on lung cancer which appeared in the October 1958 issue of "Medical Digest" in which Dr. Rosenblatt stated there was no connection between cancer and tobacco. He said that lung cancer was on the increase, but the development of such diagnostic tools as exfoliative cytology, bronchoscopy, radiology, and exploratory thorocotomy within the past 25 years has made it easier to detect lung cancer, and so the total number of observed cases is increasing. Further, he said, the rate of increase is slowing down and eventually will be stabilized, as is the case with laryngeal and other respiratory system cancers in which diagnostic methods have been established. The nasopharynx and the larynx are also exposed to tobacco, and if tobacco is a carcinogen for the lung, it should also serve as a carcinogen for the larynx and the pharynx. What do you think, Miss Nelson?

A. As I said previously, there is a difference of opinion among medical men as to whether cigarette smoking causes cancer. Apparently Dr. Rosenblatt belongs to the group that does not see a tie-in between these two.

Q. What about the problem of air pollution?

A. The problem of air pollution as a disease factor in cancer cannot be ignored. In a pamphlet issued in advance of its National Air Pollution Conference, the United States Public Health Service says the theory is still unproved, but is supported by accumulating evidence that air pollution contributes significantly to mortality rates of many of the urban diseases, such as heart conditions and cancer of the lungs, trachea, stomach, and esophagus.

A great many epidemiological and statistical studies have shown parallels between air pollution and mortality rates for lung cancer, as well as parallels between the use of tobacco and cancer. Many studies are now under way, and the promptest possible exchange of scientific information is being hoped for all over the world. The complexity of the problems involved call for open-mindedness on the part of every nurse.

Q. Early detection of cancer is most important. Don't you think nurses are good case-finders, especially since over the years nurses develop a high threshold of suspicion about diseases?

A. I not only think nurses are good case-finders, I know they are. Every day cancer patients are undergoing early treatment because some nurse in a clinic, school, industry, doctor's office, or in the home was alert enough to refer a suspect to a doctor. Yes, nurses are constantly meeting many people who ask about one or the other of the danger signals. Many people have minor symptoms and think their complaints are not serious enough to bother the doctor with. They will frequently turn to a nurse, who, if she has a good working knowledge of cancer, can refer them to a qualified physician and thus promote the early treatment of cancer when it is in its most curable stage.

Then, too, the nurse herself may notice something suspicious and encourage further examination. Why, in my own family, I recently discovered cancer in a relative who had a sore she thought was an old insect bite and which did not heal. It didn't hurt or cause pain; it did nothing except form a little scab and bleed a little every once in a while, over a long period of time. On biopsy, a basal cell carcinoma was found, and with only five treatments of low-voltage X-ray therapy, it was cured.

Q. Then nurses can do a great deal in controlling cancer?

A. I should like to make it stronger than that. Not only *can* they do a great deal, they *must*. But in order to do this, the nurse must be well informed and keep an open mind. She must educate herself if she is to educate others about cancer, its warning signs, how cancer develops and spreads. Every nurse, whether in industry, public health, hospital, school, doctor's office, or in any other situation where she meets people, can be effectively working toward early recognition of the danger signals, thus leading to early diagnosis and prompt treatment. In this way the nurse plays a major role in the control of cancer.

Q. The danger signals you speak of number seven and are probably well known to every nurse, but would you review them briefly here, Miss Nelson?

A. Yes, repetition never hurts. The danger signals—as they have been widely publicized by the American Cancer Society—include: (1) a sore that does not heal, (2) a lump or thickening in the breast or elsewhere, (3) unusual bleeding or discharge, (4) change in a wart or mole, (5) persistent indigestion or difficulty in swallowing, (6) persistent hoarseness or a cough, and (7) persistent change in bladder or bowel habits. Of course, any one of the symptoms should be investigated and promptly brought to the attention of a physician. In addition to these signs, there are others of which nurses should be especially alert in their daily observations.

Q. You mean in the course of their work?

A. Well, for instance, in the well-baby clinics, nurses have an opportunity to detect Wilms' tumor, a childhood tumor occurring in the child up to seven years of age. The nurse usually observes a "lop-sided tummy" wherein there is an enlargement of only one side of the abdomen of a small child. Such a symptom should be called to a doctor's attention immediately. Another childhood tumor is retinoblastoma, or cancer of the retina of the eye, which is sometimes referred to as cat's eye because of its appearance. As it grows, this tumor becomes visible and can be easily detected by an alert nurse. Or sometimes the mother will say something, such as, "Nurse, there is a white spot on the baby's eye." Here the nurse should immediately be on guard.

Then, of course, there are signs in the elderly patient that might go unrecognized if the nurse is not observant and alert. The elderly male patient sometimes complains about difficulty in voiding, and this can be a symptom of prostatic enlargement. We think of prostatic enlargements as benign tumors, yet a certain number of these are malignant. By such observations and prompt referrals to medical care the nurse is contributing considerably to cancer control.

Q. Miss Nelson, much work is being done to devise cancer detection tests? Are there any dependable tests, outside of the Papinicolaou smear test or "Pap smear" which most nurses are familiar with?

A. The Papinicolaou Test is at present the easiest and most popularly used test for cancer. It is a simple and effective test, applicable to any part of the body having exfoliative epithelial tissue. In other words, smears can be taken and examined of excretions from the uterus, nose and throat, lungs, bladder, and stomach. A specially trained pathologist can examine such smears and can recognize cancer cells if they are present.

Another new test now being talked about is the properdin test, in which the amount of properdin normally found in the blood is absent in the cancer patient. The whole study of the properdin levels in the blood is very interesting and will be worth while for nurses to watch.

There are a few other tests being worked on, but none have proved as valuable as the Papinicolaou smear test. So, in answer to your question, I would say that unfortunately there are few dependable tests for cancer at this time.

Q. Since the Papinicolaou smear is simple and inexpensive, why couldn't it be promoted on a large scale to detect early cancer, just as the photofluorographic equipment has been used to X-ray the chests of millions of persons to detect tuberculosis?

A. It could be, and the possibilities are being explored. A program for the detection of gynecological cancer was started in Memphis, Tenn., not too long ago. Large numbers of women were examined via Papinicolaou smears. Only a few reports have been published as yet and these are proving very interesting.

The Papinicolaou smear test is also used extensively in detection centers as part of the complete cancer check-up examination, as well as in doctors' offices, hospitals, and clinics.

Q. Miss Nelson, I understand that the New York City Department of Health is experimenting with a new approach to mass screening for cancer of the cervix, which attempt to parallel the so-called breast self-examination. In this experiment, groups of women were given simple kits to enable them to secure their own vaginal secretions for cytologic examination. What do you think are the implications of such mass screening techniques for nursing?

A. Obviously, this is a program similar to the Memphis, Tenn., program. Undoubtedly this involves the co-operation of the public health nursing service of the city. Since I am a teacher of cancer nursing in a university, I have no connection with such new public health programs going on in this city. However, it seems to me that public health nurses must have helped in the education of these women, aided in the distribution of these kits, and are helping in a major way in the follow-up of these women.

You know, many times doctors and other public health officials get so much credit for ventures such as this and yet a great deal of this work could not be done without a vast number of well-prepared, willing nurses who pitch in and do a great deal of the hard work associated with such an enormous task.

Q. Miss Nelson, you just referred to the teaching of cancer nursing. Is special training in the care of patients with cancer available for graduate nurses, and is there a definite program of education for the nurse who wants to know more about cancer?

A. A number of universities are now offering courses in cancer nursing. In New York City both Teachers College, Columbia University, and New York University have courses in cancer nursing. I am sure some other schools also offer study in this subject, and if any nurse is interested in information of this nature, I suggest she write to Miss Claire Richmond, Nursing Consultant for the American Cancer Society, 521 W. 57 St., New York 19, N.Y. Miss Richmond has recently made a study of university programs in cancer nursing and would be glad to help nurses get more information on this subject.

Q. Do any hospitals give special courses on a postgraduate or in-service basis?

A. Yes, I know of at least three who have excellent programs of this type: Memorial Cancer Center, 444 E. 68 St., New York, N.Y.; The Roswell Park Memorial Hospital in Buffalo, N.Y., and the Ellis Fischell Hospital in Missouri. Nurses might also inquire at the M. D. Anderson Hospital in Houston, Texas.

Q. We seem to have covered quite a bit in this discussion about cancer nursing, but I am curious about one thing. Do you think there is any one area in the cancer field that is of particular importance for nursing?

A. I certainly do. In my estimation, the care of the patient

(*continued on page* 33)

Advances and Trends in

DRUG THERAPY

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Modern Methods of Diagnosis and Management of Angina Pectoris

Angina pectoris is a syndrome, not a disease. The recognition of angina is an important diagnostic step since its presence denotes serious underlying cardiac disease, usually severe coronary atherosclerosis, sometimes accompanied by occlusion. The syndrome consists of paroxysmal substernal or precordial pain of short duration that frequently radiates to the shoulders and inner portions of the arms, and is usually precipitated by exertion, emotion, or other states in which the work of the heart is increased. The pain is relieved by rest or the use of nitroglycerin.

The diagnosis of angina depends primarily on the clinical history, rather than on objective findings. However, the presence of underlying cardiac disease or a positive response to tests indicating coronary insufficiency supports the diagnosis of angina pectoris.

Tests of Coronary Reserve and Coronary Insufficiency

There is a margin of safety in which a diminution in the coronary blood flow or an increase in the myocardial blood requirements may occur without producing coronary insufficiency or angina pectoris; this margin represents the coronary reserve. In persons with a seriously impaired coronary circulation, the coronary reserve is already so diminished that any factor tending to cause anoxemia is likely to result in myocardial anoxia sufficient to produce angina pectoris or electrocardiographic changes. This principle has been utilized as the basis of tests for coronary insufficiency. Anoxemia tests and excercise tests are used to determine whether there is a diminished coronary reserve.

Anoxemia or Hypoxemia Test: Generalized anoxemia is induced by having the patient breathe a mixture of 10 per cent oxygen and 90 per cent nitrogen until cardiac pain is experienced, but not longer than 20 minutes. Electrocardiograms are taken just before the test and at five-minute intervals during it until the record has returned to its control form. This test is termed positive and considered indicative of coronary insufficiency or diminished coronary reserve if pain occurs during the procedure or if certain characteristic E.K.G. changes are recorded.

Definite contraindications to the anoxemia test include: previous myocardial infarction, chronic pulmonary disease, severe anemia, cyanosis, pregnancy, acute illness, and advanced debility. The anoxemia test, used in well-prepared research centers, is not by any means used generally.

Exercise Test of Coronary Reserve: Exercise strains the coronary reserve by increasing the myocardial need for blood. In this test the patient performs a standardized amount of exercise, such as the two-step test of Masters and Oppenheimer. In patients with diminished coronary reserve, the exercise may produce pain or distinctive E.K.G. changes. Before the test is performed an E.K.G. taken while the patient is resting should register normal. In the two-step exercise electrocardiogram test, as described by Master, the patient makes 15 to 25 trips up and down two steps (each nine inches high) within one and one-half minutes. The exercise is stopped promptly if the patient experiences pain. If the single two-step E.K.G. is negative, a double two-step test is performed. This involves twice as many trips as the single test, within three minutes. A negative double two-step exercise is regarded by many as virtually excluding coronary disease.

The results of exercise and anoxemia tests on the same patient are essentially similar. Both are regarded as accessories to the clinical history, not as the decisive factor in the diagnosis of angina.

Etiologic Factors

The etiologic factors of angina pectoris are comprised of three groups: (1) primary etiologic factors which set the stage; (2) the secondary predisposing influences which favor the development of the primary etiologic factors; and (3) the immediate precipitating factors.

Coronary arteriosclerotic narrowings and occlusions may be considered as primary etiologic factors since they are associated with the syndrome in approximately 90 per cent of cases. In the absence of such changes, arterial hypertension and valvular disease probably account for less than 10 per cent of cases of angina. Aortic stenosis, with its frequent distortion of the coronary ostia and the increased cardiac work it causes, predisposes to angina.

Sex is among the secondary predisposing factors: Men are affected approximately five times as often as women. Since arteriosclerosis increases with age, angina is most prevalent in the sixth and seventh decades, but those in their forties and thirties may be affected, even in the absence of arterial hypertension or other evident disorders. Excessive emotional or physical strain promotes the anginal syndrome.

Immediate precipitating factors include those which transiently increase the work of the heart or decrease the blood flow. Among the former are effort, emotion, large meals, tachycardias, and rises in blood pressure. Coronary flow may be decreased by the lowered blood pressure in shock and at times in dehydration, hypoglycemia, and tachycardias. Coronary blood flow may also be diminished due to increased resistances in the coronary system caused by the reflex vasomotor effects of emotions or exposure to cold. Such drugs as epinephrine, Pitressin or thyroid, may cause anginal pain.

The treatment of angina pectoris is designed primarily to prevent or reduce the frequency of attacks. Prevention of attacks depends on the treatment of the underlying or contributory causative diseases and elimination or cure, when possible, of the factors which initiate or contribute to the precipitation of the syndrome.

No discussion of the modern treatment of angina pectoris would be complete without mention of recent surgical methods used in the treatment of this syndrome. Surgical procedures advocated as definitive therapy involve: the interruption of painful

impulses by cutting sensory fibers in the sympathetics or their attachments to the spinal cord; diminishing the work of the heart by total thyroidectomy; or the promotion of the development of a collateral circulation to the heart. Despite claims made for surgery, the majority of cardiologists today recommend it only for intractable angina, and then only after all forms of medical therapy have been exhausted.

Prior to considering medical therapy, the general management of the patient should be considered. Although bed rest is not ordinarily required, the physician usually advises the patient with the first attack of angina to stay in bed two weeks, with instructions to call the physician if pain persists for more than 15 minutes; such pain may represent myocardial infarction. However, exercise which would promote muscular tone and a general state of fitness without provoking pain or dyspnea is usually encouraged.

The psychologic approach to the patient with angina and the regulation and modification of his work and daily activities are important elements in the treatment and must be carefully adjusted to individual patients. Although the patient and his nearest relatives should be made aware of the possible dangers of impaired circulation to the heart, the patient must also be assured of the probability of a long and useful life.

In many hospitals, work-classification units have been set up to aid the cardiac patient in his rehabilitation. These units consist of teams of physicians, psychologists, social workers, and other pertinent professional personnel, who evaluate the condition of the patient and help to restore him to gainful employment.

Statistical studies seem to suggest a significant relationship between smoking and angina pectoris, although the mechanism by which tobacco may damage the coronary vessels or heart is not clear. Ordinary and denicotinized cigarettes may have similar effects. Often patients feel better, generally, after foregoing tobacco, even when there is no striking causal relationship between smoking and cardiac pain; it is generally considered advisable to urge these patients to stop smoking.

Regularity of bowel habits, always desirable, is particularly important in these patients since colonic stasis and associated flatulence often help to produce angina attacks. If necessary, mild laxatives may be used for these patients. Excessive straining at stool should be avoided.

Coffee and tea may be taken in moderate quantities; they have the theoretical advantage of being coronary vasodilators and the disadvantage of provoking nervousness and sleeplessness in patients.

Alcohol is often prescribed in one-half-ounce or one-ounce doses, both for the prevention and relief of attacks, but it is doubtful that alcohol has any direct value in the prevention or alleviation of angina. However, in dogs, production of a blood alcohol level comparable to that which is present in man after consumption of two or three cocktails, caused marked increases in coronary arterial flow and coronary sinus outflow.

Review of Drug Therapy

Although a variety of drugs can be prescribed for the management of angina, there is no question that the nitrites, both short- and long-acting, are the most consistently valuable. They represent perhaps the only specific medication in the relief of angina. Although several new mechanisms explaining the method of action of these drugs have been recently reported from various laboratories, there are still those who maintain that nitrites cause direct coronary vasodilation and increase the coronary flow.

Of the nitrites, nitroglycerin remains the drug of choice since it is cheap, convenient to take, and next to amyl nitrite acts most rapidly. Nitroglycerin is today available in a sustained-action tablet known as Nitroglyn. Although it is not always effective in many patients, the drug has been designed to be released uniformly for a 10- to 12-hour period.

Although amyl nitrite acts more rapidly than nitroglycerin, its action lasts only for several minutes. It is marketed in small glass pearls or ampules which are crushed in a handkerchief and inhaled. However, it is expensive and inconvenient to carry and administer; there is also the distinctive odor which calls undesired attention to the patient when it is taken in the presence of others. Its unpleasant side actions are similar to those of nitroglycerin.

Sodium nitrite, not commonly used, requires 10 to 15 minutes to produce an effect which continues one hour or longer.

The nitrites are taken both prophylactically and for prompt relief of pain after the attack develops. When used prophylactically they are taken before those activities known by experience to precipitate angina. *Under no circumstances* are the nitrites taken to permit the patient to perform some unusual strenuous activity that is likely to cause harm.

Long-acting nitrites provide the coronary vasodilator effect of the nitrites but for a prolonged, sustained period, and their action is dependent on the continued release of nitrites. Erythrol tetranitrate, mannitol hexanitrate, mannitol pentanitrate, pentaerythritol tetranitrate (Peritrate), and triethanolamine trinitrate (Metamine) are all members of this group.

In contrast to the rapidly acting and quickly dissipated effects of the short-acting nitrites, these drugs are effective in approximately 15 minutes and are reported to have a duration of several hours.

The prophylactic action of Peritrate supposedly begins in one and one-half hours and is said to last four to five hours. Though optimistic reports have been made by many investigators, there are many who believe the drug does not give sufficiently consistent benefit to justify its recommendation. The variable course of angina, the spontaneous variation in the number of attacks and in the physiologic and environmental factors which precipitate them, and especially the importance of emotional influences, renders evaluation of drug therapy extremely difficult. Therefore, unless the effectiveness of a drug is unequivocal, as is the effectiveness of nitroglycerin, or it can eliminate the need for nitroglycerin, it is probably of little or no value in controlling the attacks of pain.

Members of the xanthine group of drugs, usually compounds of theobromine or theophylline, have been widely employed in cases of angina pectoris due to coronary disease, despite considerable doubt as to their clinical effectiveness. The use of these drugs is based on experimental observations indicating that in isolated perfused hearts or in the intact animal they produce coronary vasodilation and an increased coronary flow. However, when the dosage of the drug administered and the amount and transiency of increased flow are considered, it is questionable whether these experiments form an adequate basis to expect clinical benefit from the drugs in human cases of angina. Controlled studies in patients have not confirmed the claims of clinical benefit from the xanthine drugs.

Aminophylline is used most frequently but its absorption is poor or inconstant when administered orally and gastrointestinal distress is caused with adequate dosage. Recently, choline theophyllinate has been reported to give relief and to control the anginal syndrome; it is said to be better absorbed and give higher blood levels than equivalent amounts of aminophylline.

Other xanthine derivatives used include theobromine and sodium acetate and theocalcin.

Many of the xanthine drugs have been marketed in combination with sedatives, usually with phenobarbital. The chief disadvantage is the rigidity imposed on the relative dosage of the two components; in particular, the dose of phenobarbital often needs to be altered for different patients and even for the same patient at different times. The advantage is that the sedative may assure the benefit of at least one drug in the combination.

Sedatives are among the most widely prescribed drugs in the treatment of angina pectoris. Their purpose is to allay anxiety and minimize the emotional reactions which may precipitate attacks of pain. Phenobarbital is used most frequently. The bromides and chloral hydrate, as well as other barbiturates, are also acceptable preparations for sedation. Opiates are contraindicated since addiction might readily occur.

Recently the so-called ataractic or tranquilizing drugs have been administered instead of the established sedatives. Miltown, Equanil, and Thorazine have been utilized to reduce emotional tension.

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NITROGLYN — VASODILATOR

DESCRIPTION: Nitroglyn is a new form of nitroglycerin tablet that is absorbed slowly through the stomach and intestinal tract over a period of many hours.

ACTION AND EFFECT: All nitrites act on the arterial system by causing relaxation or dilatation of the arteries, thereby facilitating the flow of blood. The actions of these drugs, while very similar, show interesting and useful variations. Nitroglycerin, which is absorbed through the mucous membrane of the mouth, acts within one or two minutes and the effect lasts for about half an hour.

The action of this group of drugs is easily demonstrated clinically and experimentally: They produce a fall in blood pressure; rapid, bounding pulse; and a feeling of fullness in the head in varying degrees, depending on the specific drug and dosage administered. The pulse wave after nitrite administration shows increased height and sharpness of the main deflection, and there is also an accentuation of the secondary wave which appears on the downstroke of the main wave. These characteristic features are useful for objective study of the drug's effect.

This characteristic vasodilating effect was demonstrated by Mann by means of a new and sensitive instrument known as the capacigraph, which operates electrically and is sensitive to the slight volume change in a finger produced by the pulse wave.

A study was made to compare the duration of action of the usual sublingual nitroglycerin tablet taken under the tongue, compared with a new form of nitroglycerin tablet, Nitroglyn, which is absorbed slowly through the stomach and intestinal tract over a period of many hours. The effect of sublingual nitroglycerin becomes evident after two or three minutes and persists for a period varying from 12 to 27 minutes, with an average duration of 18 minutes. The slowly absorbed Nitroglyn generally takes 10 or more minutes to produce the initial effect, but this effect persists for periods varying from 280 to more than 510 minutes, with an average duration of about 340 minutes. The difference between the two forms of the drug is so marked that it can be stated with reasonable certainty that Nitroglyn, which is slowly released, has an effect which lasts approximately 20 times as long as the effect of sublingual nitroglycerin.

USES: Nitroglyn is indicated in all patients who received temporary relief from sublingual nitroglycerin. It is maintained that with Nitroglyn the pain and spasm of coronary insufficiency may be relieved, as well as the anginal sequelae of myocardial infarction.

PREPARATIONS: Nitroglyn is available in oral tablets of grains 1/25 and 1/10.

DOSAGE AND ADMINISTRATION: Dosage is adjusted to the individual patient's response, the recommended initial dosage being two grain 1/25 tablets daily, one in the morning and one at night. After a week on this regime, if the symptoms have not been adequately controlled, the dosage may be increased to two tablets of grains 1/10 each, one tablet taken in the morning, the other at night. Then after several weeks an attempt can be made to reduce the dosage to the previous schedule.

Occasionally grains 1/10 may be taken three times daily.

TOXICITY: The side actions of Nitroglyn are the same as those of nitroglycerin: Pulsating headache, faintness, and confusion for those who are particularly sensitive.

PRECAUTIONS: It must be recognized that the nurse is very important in making accurate observations regarding the effectiveness of the drug. Nitroglyn is inconstantly effective in some patients and this fact must be recognized so that the necessary changes in the form of medication can be made.

PERITRATE — VASODILATOR

DESCRIPTION: This drug is known chemically as pentaerythritol tetranitrate and is a white crystalline material.

ACTION AND EFFECTS: Peritrate, a long-acting nitrate, is dependent for its effects on the nitrite released in the body after administration of the drug. The prophylactic action is said to begin one and one-half hours after administration; it lasts four to five hours.

Very favorable claims have been made for this long-acting nitrate. Among 258 patients treated by Dailheu-Geoffroy with 60 mg. divided doses, over 80 per cent showed good results; only 33 per cent showed improvement with other vasodilators of the coronary blood vessels. Winsor and Humphreys reported that Peritrate, in an average daily dose of 30 mg., reduced attacks of angina pectoris in 125 patients by an average of 78.4 per cent, whereas there was no reduction in the number of attacks in 125 patients used as controls and given placebos, aminophylline, khellin, or Theocalcin.

Peritrate was said to reduce significantly the requirement of nitroglycerin, increase exercise tolerance, and, like nitroglycerin, reduce or prevent E.K.G. changes which represent signs of myocardial ischemia. Similar favorable observations were reported by other investigators, but it is of importance to note that few, if any, patients who required nitroglycerin were able to dispense with its use entirely by taking Peritrate.

USES: Peritrate is used as a prophylactic agent to prevent angina pectoris. Because its action is not immediate it is used frequently in conjunction with nitroglycerin.

PREPARATIONS: Peritrate is available in 10 mg. tablets.

DOSAGE AND ADMINISTRATION: Peritrate is administered orally in 10 mg. tablets in doses of one or two tablets, three or four times daily.

TOXICITY: Peritrate seems to be essentially free of serious side effects. This statement is in keeping with the reports of von Oettingen who showed that in rats which had daily feedings of moderate doses of the drug, the red-cell count, hemoglobin, white-cell count, and differential count made at monthly intervals showed no evidence of toxicity. The experiments were carried out over a period of one year, and doses of 2 mg. kilo. of body weight were given during this time. No adverse effect on growth, nor any histological changes in the lungs, liver, kidneys, spleen, femur, brain, and specifically no injury of the vascular walls was noted.

Side effects of the drug include occasional headache, nausea which may disappear after continued administration, weakness, palpitation, flushing, and mild hypotension. Rarely a dermatitis results from drug intolerance.

PRECAUTIONS: Friedberg maintains that despite optimistic reports on Peritrate, he has not found it to give sufficiently consistent benefits. The variable course of angina pectoris, the spontaneous variations in the number of attacks and in the physiologic and environmental factors which precipitate them, and especially the importance of emotional influences render evaluation of drug therapy extremely difficult in angina pectoris. Friedberg therefore believes that unless the effectiveness of a drug is unequivocal, like that of nitroglycerin, or unless it can eliminate the need for nitroglycerin, it is probably difficult to use the drug for controlling attacks of angina.

CARDILATE — VASODILATOR

DESCRIPTION: Cardilate is chemically erythrol tetranitrate.

ACTION AND EFFECTS: It is known that the pain in patients with angina pectoris is the result of myocardial hypoxia due to coronary arterial disease and that pain occurs when there is a discrepancy between the myocardial demand for oxygen and the supply brought by the coronary circulatory system. Amyl nitrite and nitroglycerin have always been considered most effective in managing the acute attack of angina pectoris, yet the short duration of their action limits their usefullness in long-term control.

The sublingual administration of Cardilate brings about action within six to ten minutes, and this action lasts for at least two hours after the dissolution of tablets, sometimes up to four hours.

Cardilate results in the release of nitrite. The basic action of nitrites is the relaxation of smooth muscles, especially those of the finer blood vessels, independent of innervation. The postarteriolar vessels, capillaries and venules, are most susceptible although the larger veins and arteries also become relaxed to some extent. The beneficial action of nitrites in the treatment of angina is attributed to increased coronary blood flow, which has been shown to occur in systole and diastole and is the result of decreased vascular tone or resistance. The nitrites are considered to be the most potent coronary dilators: their action is exerted at extremely minute blood concentrations. Favorable effects of Cardilate are reflected in E.K.G. results.

USES: Since its onset of action is somewhat slower than that of nitroglycerin, Cardilate is intended primarily for the prophylaxis and long-term management of patients with frequent or recurrent anginal pain and reduced exercise tolerance, rather than for the treatment of acute attacks of angina.

PREPARATIONS: Cardilate is marketed in scored tablets of 15 mg. each, designed for sublingual administration.

DOSAGE AND ADMINISTRATION: The usual dose of Cardilate is one tablet buccally or sublingually, three times daily. Since Cardilate is designed to disintegrate slowly, the tablets are best taken after meals.

Two or three tablets taken three times a day are well tolerated, but a temporary headache may sometimes be encountered with the larger dose. For those patients subject to nocturnal angina, an additional tablet before bedtime is recommended.

Earlier studies which concluded that Cardilate was less effective than nitroglycerin, both in the degree to which the exercise tolerance is increased and in the number of patients who benefitted, did not take into account that the nitroglycerin was administered sublingually while the erythrol tetranitrate was swallowed. Accordingly, Riseman compared these drugs in a double-blind study using the same routes of administration for each drug. It was observed that in marked contrast with the results obtained when the drug was swallowed, the action of erythrol tetranitrate was comparable to that of nitroglycerin when administered the same way.

TOXICITY: Side actions in the use of Cardilate consist of a pulsating headache similar to that observed after using nitroglycerin. Such headaches may be relieved by acetylsalicylic acid or combinations of the latter with caffeine and phenacetin.

PRECAUTIONS: In hypersensitive individuals therapeutic doses may produce faintness and confusion related to postural hypotension. This is especially true in patients with anemia and in those inclined to syncope. Simultaneous ingestion of alcohol may markedly accentuate the action of Cardilate. Caution should be observed in patients with cerebral hemorrhage or glaucoma because of the vasodilation which occurs in the areas affected by these diseases.

NITROGLYCERIN — VASODILATOR

DESCRIPTION: Chemically, nitroglycerin is glyceryl trinitrate. In its pure form it is a yellowish fluid, very highly explosive. It is this material that is incorporated into tablets used clinically.

ACTION AND EFFECTS: Nitroglycerin belongs to the nitrites which cause direct coronary vasodilation and increase the coronary flow and relieve the load on the heart. Nitrites are heralded as the only specific medication in the relief of angina. As a rule the drug is used for prompt relief of pain after the attack develops, but nitroglycerin should also be employed prophylactically when possible. The latter is possible if the drug is taken before the patient performs activities known by experience to produce pain. Of course, whenever possible it is best to avoid both the precipitating factor which causes pain and the use of nitrites.

USES: Nitroglycerin is usually considered the drug of choice for abolishing attacks of angina pectoris or even prophylactically to avoid these attacks when the patient senses an impending attack.

Nitroglycerin may also be employed as a diagnostic agent to differentiate between the pain of angina pectoris and that of acute coronary thrombosis: The pain of acute coronary thrombosis is not relieved by nitrite medication. Considerable caution is necessary in using the drug because the patient with a fresh myocardial infarction may be in a state of collapse. A single 0.6 mg. tablet may be placed under the tongue if the blood pressure is not too low, and if the effect is carefully noted. If pain persists, the existence of coronary occlusion is more likely. A second tablet may be given only after a suitable interval. The careless use of nitroglycerin in patients with acute myocardial infarction may cause dangerous ectopic tachycardia, collapse, and even death.

PREPARATIONS: Nitroglycerin is marketed in tablets which contain 0.3, 0.4, 0.6, or 1.2 mg. of the drug; the dose varies from 0.1 to 0.6 mg., or more.

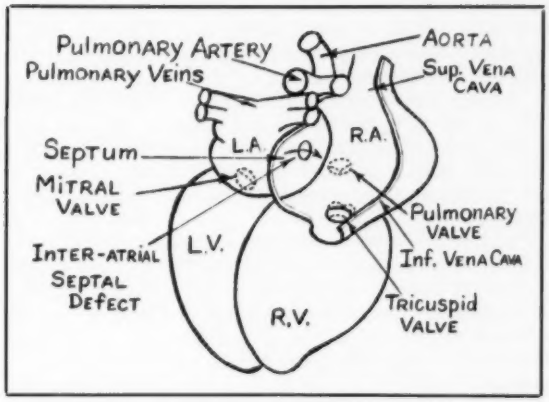
DOSAGE AND ADMINISTRATION: Nitroglycerin is administered in tablets which the patient is instructed to dissolve under the tongue. The usual therapeutic dose is 0.6 mg., but it is preferable to begin with 0.3 mg., since this is frequently adequate and less likely to induce uncomfortable side actions. Nitroglycerin's action is noticeable in one to two minutes and continues for 15 minutes to an hour. In most cases the relief is striking and prompt.

TOXICITY: The administration of nitroglycerin may be accompanied by feelings of mild fullness, warmth, or throbbing in the head. In rare instances, in patients with an idiosyncrasy to the drug, severe headache, faintness, or even syncope may occur.

PRECAUTIONS: Until the effects of the drug are known, it is advisable for the patient to sit down when taking the drug. The patient should be told that if after repeated beneficial use of nitroglycerin he suffers an attack of pain that does not respond to this therapy, he should cease all activity immediately and notify his physician. Except when taken prophylactically, nitroglycerin should be taken for those attacks which are known to subside promptly with a brief period of rest. Since the pain will disappear rapidly and spontaneously, there is no need for the patient to suffer any unpleasant side actions of the drug.

To allay her patient's apprehension, to answer his questions, to encourage him through a positive approach, to be gentle and support his faith, to show confidence in the abilities of her co-workers on the health team—these are part of

the nurse's role in Cardiac Catheterization



Before cardiac catheterization the nurse-author drew a rough sketch of the posterior view of the heart on an ordinary paper towel to help the patient visualize the heart's structure and her own heart's possible defect.

by **HELEN CREIGHTON, R.N., J.D.**

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THE morning report said: "Mrs. D., cardiac catheterization at 8 A.M." Have you ever wondered how such a patient en route to the cardiac catheterization laboratory feels?

Accompanying a number of persons on that journey, I have heard the following comments:

Mrs. D.: "You know, I feel like the little boy in the song who says, 'Tell me a story, tell me a story when my prayers are said.' I said my prayers, and I expect this test will help the doctor tell me whether an operation will be necessary or will help me."

Six-year-old Mark had this to say: "I belong to Buck Rogers' Explorers Club. See my badge? And this morning I go on sort of a space-ship expedition. Papa is coming along. And when the lights go out the doctor will start us with a countdown: 10, 9, 8 . . ."

A 36-year-old railway clerk, Mr. L., expressed this view: "Well, I'll be glad when it's over. But, as I said to my wife, the test makes sense; the doctor is really trying to learn everything he can about my old ticker."

Apprehension

These representative comments reflect one thing: The nurses caring for these patients had helped them overcome their apprehension. Apprehension is the cardiac catheterization patient's biggest problem. Possibly more than anyone else, the nurse at the bedside can help her patient put his mind at ease.

The Positive Approach

To begin with, a positive approach to people and to living is half of the battle. A thorough-going, genuine love of, interest in, and acceptance of people as individuals is most important. The way a nurse works indicates her attitude.

Let's consider the case of Mrs. D. and her admission to the hospital: A Pink Lady* casually but pleasantly chatted with a young couple as she brought the wife in a wheelchair down the corridor to 2 South. The wife's face was rather hollow, though a malar flush gave it color; her shoulders drooped as though tired, and she quietly rubbed her numbed hands together (it was bitterly cold outside) as her eyes intently followed the changing scene. Walking beside her was her husband, a thin, muscular, weather-tanned, prematurely aging man. He carried a worn, brown cardboard suitcase and a magazine, and wore a neat, well-pressed lightweight tweed suit, white shirt, and green tie. He wore no overcoat, just an additional heavy V-necked sweater under his jacket.

As they approached a young student nurse she said, "Good afternoon, I am Miss B. May I help you?"

With a smile, the Pink Lady replied, "Yes, thank you. This is Mrs. D., a patient of Dr. S. She will be staying in Room 217. Mr. D., this is Miss B., one of our nurses."

"How do you do, Miss. I just wanted to get my wife settled before I go to work—have to be there at 3 o'clock," Mr. D. replied.

"I've been expecting you, Mrs. D." the student nurse declared. "Dr. S. called and left some admission orders; he will be in to see you at 5 o'clock." With this, Mr. and Mrs. D. seemed to relax a bit as they proceeded to the ward.

At the bedside Mrs. D. was helped to her feet and then onto the bed. Turning to the Pink Lady she said, "Thank you. Ordinarily I'm not one to have somebody push me around in a wheel chair. But I guess right now I do need it. It has been easier because you made it seem as though I was doing you a favor to ride up."

Miss B. turned to Mr. D. and said, "I am going to put this chair outside the ward door for you. Wouldn't you like to sit down and wait about 10 minutes while I help your wife get undressed and more comfortable in bed?"

Mr. D. put the magazine in his wife's hand, gave her a pat on the shoulder, and stepped outside to wait.

Deftly Miss B. assisted Mrs. D. to undress and put on her hospital gown. Since Mrs. D. was able to void, an admission urine specimen was secured. The head of the bed already elevated on eight-inch blocks, was rolled up to a

*A volunteer worker from the Ladies' Board of Georgetown University Hospital.

45-degree angle which felt comfortable to Mrs. D. While the thermometer was registering, her clothes were carefully put away in her wall locker.

"I guess you think a mother of five kids pretty silly to be reading *True Love*," she remarked to Miss B. as she slid the magazine under her pillow, her nervous smile revealing carious teeth.

"Not at all, almost everyone enjoys a little light reading," replied Miss B.

"Well, I'd always kind of wanted one of these magazines and when I had to come to the hospital again, Chuck got it and told me, 'Just read and don't worry.'"

"I'm sure it will add glamour to the diagnostic tests." Then Miss B. continued, "Tell me, how old are your children?"

"The oldest is Grace, she is 12 . . ."

The curtains were drawn, and Mr. D. rejoined his wife for a few moments.

In a strange research center, Mrs. D. was expected and both she and her husband were welcomed. She was assisted to the ward, her husband was encouraged to wait until she was comfortable in bed and then said good-by. They seemed to understand her little extravagance—the magazine. She had told the nurse about her five children: their names, ages and so on. In this friendly environment, her sense of dread disappeared.

Gentleness

The nurse who quiets anxiety is gentle, with a quiet footstep, soothing hand, and kind word. In a gentle atmosphere even Mark's anxious parents in the waiting room could relax and rest a bit.

The nurse quiets fear by supporting and sustaining her patient's faith in his Creator. She recognizes the strength behind Mr. L.'s determinedly repeating: "I can do all things through Him who strengthens me." She knows he is a bit worried about his four children who are temporarily staying with various relatives in Maine—and about his finances. The scapular medal that she must remove from around his neck she fastens around his ankle, as he requests. She encourages that faith in the realization that the peace of God can and does bring some very real peace in this life. And when little Mark volunteers, "You know I am an angel in the Christmas play. Want to hear me sing, 'Jesus Loves Me'?" she does want to hear his song.

Understanding Catheterization

The nurse alleviates apprehension who understands the cardiac catheterization procedure, how it is carried out, and its value as a diagnostic tool to the physician. She can give short, simple answers to questions. She has confidence in and is optimistic about the work of her co-workers on the health team, and this confidence and optimism is contagious.

To understand a cardiac catheterization, one must remember certain basic facts about normal circulation. In the normal heart there is an anatomical and dynamic separation of the right atrium with its tributary vena cava, the right ventricle and the pulmonary artery through which venous blood with reduced oxygen content flows from the left atrium and confluent pulmonary veins, the left ventricle and the aorta through which almost completely oxygenated blood flows.

Moreover, in a normal person the blood pressure in the left atrium is higher by a few millimeters of mercury than that in the right atrium, and the systolic pressure in the left ventricle and both the systolic and diastolic pressures in the aorta are several times higher when compared with the right ventricle and pulmonary artery, respectively. Therefore, if there is an abnormal opening between the right side and left side of the heart there is a shunt of blood from left to right unless conditions are greatly altered in the pulmonary circulation. There are distinct patterns of blood pressure curve in atria, ventricles, pulmonary artery, and aorta. If the nurse realizes that the amount of blood flowing through the pulmonary artery equals that flowing through the aorta, it is easier for her to understand that the pressure differences are related to less resistance in the pulmonary than in the systemic circuit.

With rare exceptions there are four groups of congenital cardiac defects: (1) an abnormal opening between the atria, the ventricles, or the pulmonary artery and aorta, (2) a narrowing of the valve connection between two parts, such as an atrium and ventricle or ventricle and pulmonary artery or aorta, (3) an abnormal location, growth, or drainage of the sizeable arterial or venous parts, (4) a combination of these defects. Cardiac catheterization helps the doctor to recognize the type of defect and study its effect on the circulation.

The Patient's Questions

While the nurse is giving bedside nursing care, the adult patients for whom the diagnostic procedure has been ordered have invariably asked

A cardiac catheter through which saline is constantly dripping is inserted through a branch of the left basilic vein. Fluoroscopy is used to follow the progress of the catheter.

Blood samples are taken from various cardiovascular sites and also from a convenient artery. At lower left is cathode-ray oscillograph; at lower right is Sanborn Twin-Viso Recorder.

questions about the heart's structure, how blood goes through it, and what the procedure might show. "The doctor is too busy, I can't take his time—but can't you show me how the heart works and what can go wrong?" they may ask. Some of the well-educated patients certainly have studied human circulation, others with less formal schooling perhaps have not studied it in detail. But as patients with an awakened personal interest, both groups evidence a special interest in the anatomy and mechanics of the heart. When a patient asks my aid, I take a paper towel from the wall dispenser by the sink (that is the one piece of paper uniformly available in a room) and with my pencil make a crude sketch of the heart, explaining and labeling each part as I proceed. (See accompanying illustration made for Mrs. D.) The five-minute sketch and explanation, while no work of art, seem to interest the patient greatly, answer many of his questions, and give him a rather satisfying idea that he has some understanding of how blood goes through the heart and some of the possible defects which interfere with normal operation.

On such an illustration one can show the possible course a catheter may take in the heart and point out the type of information collected at various points. A number of these paper-towel diagrams, I have been told by former patients, have made their way to various sections of the country so that each patient could tell people "back home" something of his problem and what was done about it. It gives a patient a feeling that we are doing things with him rather than to him. During the cardiac catheterization itself the patient strives to co-operate fully with the team because he knows what they are endeavoring to find out and why it is important. Again patients repeatedly state the diagram gives them a feeling of confidence in the nurses and coworkers of the health team: "They really know what's going on and what they are doing if they can explain it in a simple way."

If a nurse simply cannot draw quick, rough diagrams to help her answer patients' questions, she can utilize a duplicated unlabeled diagram and mark each part as she traces the circulation of blood through the heart and points out possible problems. However, it is felt that the nurse who thoroughly understands the work will be able to diagram roughly and readily explain it in a manner utilized by doctors for years. The dread of the unknown disappears with the simple, easy-to-follow explanations of pleasant, confident nurses.

Responsibilities

In the actual cardiac catheterization, the nurse is responsible for assembling the equipment[1] and for the observance of sterile technique. In practice the fasting patient who has been given some sedation lies on the fluoroscope table, his arm placed on an armboard. The antecubital fossa area of the arm is prepared with merthiolate and the site surgically draped. One per cent procaine solution or some similar local anesthetic is injected into the area around the median basilic vein which is brought to the surface, opened, and the catheter through which saline is steadily dripping is threaded into the vein. The progress of the catheter is followed by means of fluoroscopy. The catheter's passage through any abnormal opening is immediately evident. In Mrs. D. the catheter passed from the right atrium into the left atrium and out into one of the left pulmonary veins.

During this time a technician or doctor monitors a continuous electrocardiographic tracing to detect arrhythymias or ventricular extrasystoles. As a rule these are stopped by moving the tip of the catheter away from the irritated point.

Reassurance

When the patient arrives at the cardiac catheterization laboratory and sees the mass of strange equipment, the nurse should reassure him. As his position becomes tedious, she diverts his attention by engaging him in conversation on a variety of topics of interest to him. Mrs. D. was interested in Christmas preparations for her children and their school activities.

With little Mark in the dark setting required for fluoroscoping we conducted our make-believe trip to the moon in a space ship. The wall posters of satellites and a miniature space ship initially occupied his attention, the array of equipment and the busy activity of the medical personnel he accepted as necessary launching ceremonies to get the trip started, while several stars, two balls (planets), and a plane—all fluorescent and suspended on lengths

[1] In our hospital the equipment consists of the usual venotomy tray, the cardiac catheter, an infusion set to maintain a slow drip of saline through the catheter, twenty 10-cc. heparinized numbered syringes whose plungers have been lubricated with sterile mineral oil, two 20-cc. saline syringes, two 20-cc. heparin syringes, mercury, a container of ice and a set of twenty numbered 5-cc. syringes with saponin solution.

A student nurse delivers the sealed blood samples packed in ice to the adjacent laboratory where Dr. Irene Roeckel will analyze them. There the nurse sees the spectrophotometer.

The patient breathes room air from Tisiot spirometer. The oxygen intake together with blood oxygen data aids in measuring amount of blood that shunts through abnormal openings.

Student nurse Ann Benesch and Sister Juliana, S.C.N., medical supervisor at the Georgetown University Hospital, watch as Mrs. D. happily reads one of the 32 get well cards which were a surprise from her third-grade son and all his classmates.

of cord—moved with air currents and made the trip "come true." The nurse had prepared a number of colorful space-ship cards (duplicate pictures from the Sunday comics mounted on cardboard) for use with an old-fashioned stereoscope. When the lights were on, Mark continued his trip. Trying on the doctor's red goggles, blowing his father's duck call, and "shooting" a toy paper gun (it made a snapping noise when shaken) provided active diversion. Later anxious parents listened to Mark's account of the space-ship journey. Greatly relieved, they paused to tell us as they were leaving, "It may be a short life—thank goodness it is a happy one . . . It is so much easier for us . . . We had wondered if we should bring him to the hospital."

Assisting the Team

During the procedure as the catheter is withdrawn, blood samples for later analysis are taken through the catheter from the pulmonary artery, the outflow area of the right ventricle, the area near the tricuspid valve in the right ventricle, the area in the right atrium near the tricuspid valve, the lower and upper areas of the right atrium, the superior vena cava, and blood samples are also simultaneously taken from some convenient artery. Either a nurse or a highly skilled technician must accurately note the exact time (every second counts), the position of the catheter, and the number of the syringe. The nurse makes certain that these samples—packed in chipped ice—are taken to the laboratory where they are analyzed for their oxygen content on the Van Slyke apparatus to provide data concerning the patient's blood oxygen content.

Next the patient's oxygen consumption is determined by collecting his expired air for three minutes. Its oxygen content, together with that of room air, is determined on the Haldane apparatus. Again the nurse whom the patient knows can reassure him and help secure his best co-operation. The patient's cardiac output is determined during exercise as well as at rest.

After the Procedure

After the completion of the cardiac catheterization the patient is especially in need of T.L.C. At best it is a somewhat lengthy procedure, where the prolonged maintenance of the necessary position becomes very tiresome. Certainly upon return to his room if a patient wishes undisturbed rest with soft, though cheerful music on the radio or phonograph, his wishes are respected. It has been our experience that in addition to restful music, the majority prefer a quick warm bed bath and a soothing backrub. Even more than usual, the arrival of the daily mail is a welcomed diversion.

In particular, Mrs. D. received a joyous surprise: Each boy and girl in her third-grade son's class made a get-well card, and the arrival of the package could not have been better timed.

Such patients are generally receiving antibiotic therapy; if not, as a precautionary measure, prophylactic administration of a selected antibiotic is given prior to and following cardiac catheterization. Once again the nurse's explanation of the treatment as part of the "planned routine" eases a patient's worry. Following the procedure the nurse frequently checks her patient—extra comfort measures and attentiveness are so much appreciated on this day. At the same time it gives her an opportunity to observe him closely for any possible untoward reaction.

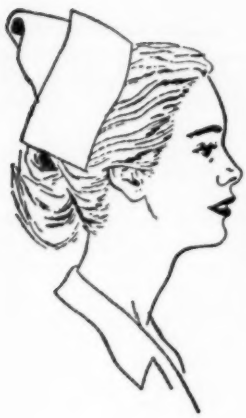
Patient Teaching and Follow-Up

In the day or days that follow, the nurse assists her patient to accept the recommendations of the physician made in the light of this plus other diagnostic procedures. For Mrs. D. this entailed immediate referral for dental surgery with necessary follow-up care, planning a much needed high-protein, high-vitamin, 800 mg. low-sodium diet within her limited economic means, instructing her about her daily medications, and arranging for further planned care to be given at home by a member of the Visiting Nurse Association in addition to continued supervision through the Cardiac Clinic. Since a re-evaluation of Mrs. D.'s status and possible surgery were contemplated within a few weeks, Mr. D. was referred to the social service department for further assistance in planning: five children ranging in age from 16 months to 12 years, medical expenses, a house with few conveniences and no telephone, low income ($235.00 per month), and evening hours of employment are but a few of the factors with which they struggle quite cheerfully in maintaining their home.

Mark busied himself with a coloring book (more space-age pictures), a simple erector set for building endless things, and limited activity which he greatly enjoyed with other children in the playroom. His parents engaged in much soul-searching as to elective open heart surgery for Mark, were helped by the nurse who said, "This is normal. Certainly you love him, want to do what's best for him, and such decisions are not easy to make."

For Mr. L. it meant the surgery he had anticipated would not be done. He was digitalized, placed on a daily dosage of oral penicillin, and on a salt-restricted diet. With adequate medical supervision and a program of somewhat limited activity, it was felt surgical intervention was not warranted at present. Re-evaluation in a year, or sooner if his condition so indicated, was planned. Again the nurse who emphasizes the individuality of patients and personal planning and care for each, can help the patient so regard his prescription as being in his own best interest.

From admission to discharge the nurse follows her patient scheduled for a cardiac catheterization. She allays his apprehension, assists with diagnostic procedures and his general care, helps answer his questions and, finally, plans with him for the prescribed next step, whatever it may be.



THE DYNAMICS OF HUMAN RELATIONSHIPS

Let's talk it over

by **THERESA G. MULLER, R.N.**
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DR. WILLIAM A. HUNT opened the 1958 Workshop on the Dynamics of Teaching by telling the assembled participants that he did not view his role as an authoritative one in which he could spell out the goals of nursing education or define the ways of accomplishing them. Rather, he raised certain problems basic to education in general, pointed out their implications for nursing education in particular, and challenged nurses to find their own solutions.

Nevertheless he went on to say that even a friendly commentator speaking from the sidelines needed some justification for his role. Dr. Hunt's justification came from his current position as an educator and his role in clinical psychology. At present he is involved with many of the same problems of professionalization that beset nursing. In addition, he indicated that the service functions of clinical psychology often came in contact with educational and clinical nursing functions. His presentation, "Education —The Dream and Reality," was published in the November 1958 issue of NURSING WORLD and brought out some significant points for the consideration of nurses.

An American dream, Dr. Hunt pointed out, is the assumption that every individual has a right to an education. With this basic tenet of democracy there is no quarrel, but viewing it realistically one finds two practical qualifications: How can it be obtained, and how capable is the person who is to benefit from it? In the first instance, problems about economic and environmental opportunities are raised; in the second, the problem of individual differences in ability appears.

The implications of these problems for education bring up three other latent assumptions which are too often overlooked. It is expected that the desired content is known and available, efficient methods of transmitting it are at hand, and capable persons are available to benefit thereby. All of these considerations are directly reflected in nursing. Simply related, they are: What to teach, how to teach it, and who is to be taught.

Any answer reached by careful, objective assessment of the realities of the situation requires continuous reassessment. It is a developmental process which is unlikely to be uniform and stable. A typical picture of the situation depicts a succession of relatively stable periods alternating with periods of drastic change.

At present the nursing profession is in a period of drastic change, and some duties are being upgraded. This upgrading has two important implications for nursing—the addition of some duties of increasing complexity and difficulty with increased responsibility, and the release and delegation of other duties to ancillary groups.

Such upgrading is reflected in all of the scientific professions as a consequence of the increasing accumulation of scientific knowledge. Its effects are particularly evident in medicine, demonstrated by the increasing demands of medical education, the demands of specialization, and the downgrading of some functions now given over to nurses.

The problems of normal development in the assumption of new duties are complicated by a basic conflict within nursing itself. An early philosophy of bedside care involved an intimate personal patient inter-action wihch is now being crowded out by the administrative, teaching, research, and related duties of nurses. Nursing as a profession is beginning to face this problem but has not yet adequately worked it through. Until this is done and the professional role of the nurse is more clearly defined, as well as emotionally and intellectually accepted by the profession, no answer to the question of what to teach will be readily available.

The process of downgrading and releasing some functions to ancillary groups also raises problems of role subordination, authoritative control of ancillary groups, and responsibility for educational functions. These are as yet secondary problems, overshadowed by the necessity of first defining and accepting the role of professional nursing.

Certain broad problems require specific attention. Their implications for psychology in the nursing curriculum are determined by the tremendous scope and diversification of nursing duties—from bedside care to administration and research. A further question involved in the selection of instructional subjects concerns the ability to make choices about the relative importance of the psychological processes of illness on human inter-action. Then, too, how might satisfying the needs of patients be taught apart from the teaching of leadership functions, small group processes, system analysis, and decision making? There are also the special needs in nursing. Too often in the past the disciplines involved in nursing education—medicine, biology, physiology, psychology, sociology—have not shaped their materials to meet nursing problems, but narcissistically and egocentrically have provided an unrealistic content reflecting their own needs and desires.

How to teach then depends upon what is to be taught and to whom. We must also realize that formal education as a discipline is based upon uncertain technological assumptions and that we must be discriminating about when to teach by precept and when we should teach by example. Here the examination of problems of participation in the classroom versus a clinical setting will reveal how costly the latter method is in terms of time, facilities, and personnel.

Who is to be taught depends not only on what is taught and how it is presented, but also on recruitment problems. How large a pool of potential nurses can our economy provide? Professional needs are not ultimate, they are relative to our special economy and culture. What compromises may be necessary to meet the needs and desires of prospective nurses? What special problems arise from the fact that nursing is predominantly a female profession?

Morning discussions within the workshop subgroups dealt with this provocative presentation. Then after lunch the workshop participants reconvened in a general session.

Miss Muller (Moderator): This afternoon Dr. Hunt is with us to raise questions and to clarify others regarding his talk this morning. Group representatives seated at this table are Mrs. Doan, Group I; Mrs. Weber, Group II; Miss Cheney, Group III; Miss De Vries, Group IV; and Mrs. Weltmer, Group V. Dr. Hunt, would you like to have all the questions before discussing any of them?

Dr. Hunt: Isn't there something in your program about nondirective techniques? However, there is a possibility that the questions will organize and cancel out one another. Now, what are they?

Mrs. Doan: Who selects the material borrowed from other disciplines which should be shaped to our needs? Is it really better for nurses to receive a general education before going into a specialty? Some European countries start nursing programs with specialties and then continue with general education. I have one more question: What is the difference between knowing about and recognizing illnesses?

Mrs. Weltmer: Dr. Hunt, you questioned the value of giving so much information in the short time we are here, and we want to know why this is not justified when it is likely to stimulate people to go further on their own? How much does the technique of teaching have to do with some teachers being better than others?

Miss Cheney: We should like to know more about the advisability of educating such various nursing groups as aides, practical nurses, and students in the same institution. What is the value of teaching nursing students to learn from observation, compared with learning by doing?

Miss De Vries: How reliable are the selection tools we use in nursing? What is our responsibilty for the student who has been selected and then seems unsuited to nursing? Are we obligated to help her find a more suitable field? The concept of nursing which the public and prospective students have involves the administration of patient care, but a nurse is confronted with the need to take on administrative duties. How soon should we prepare a student for such responsibilities?

Mrs. Weber: Should students be made aware of why we teach as we do? What are some criteria for revising a course outline in a basic subject?

Dr. Hunt: I am going to need your help on some of these questions. However, the thread running through all of them consists of educational content and teaching.

I can't answer the question on the selection of educational content borrowed from other disciplines for use in nursing, but I'll risk some generalizations about historical patterns. Here you will find a necessary dropping of boundaries. You must realize my present confusion in stepping out of a role as an experimental psychologist to talk with you about nursing. If you find my contributions of value you will accept them. Likewise you should expect your contributions to be accepted by other disciplines when you cross over to them.

You have nurses—for instance, Miss Muller and Miss Nahm—who are interested in psychology, and psychology is interested in related nursing problems. Such cross-disciplinary contacts are helpful in the selection of appropriate content in nursing. You are already aware of what happens when a physicist gets interested in chemistry and the chemist in physics—you then have physical chemists. And the combination of biology and chemistry has resulted in the formation of the field of biochemistry.

We are likely to be insecure in our excursions into other disciplines and their invasion into ours. There is no quick and easy solution to this matter, such as drawing hard and fast lines to indicate that a nurse should keep to interaction, a psychologist to communication, a human engineer to informational theory. But you might ask about who is more capable and best prepared in the situation. As nurses, you have political opinions; why not scientific opinions, too?

What was the question in regard to good teaching?

Mrs. Weltmer: We wondered about which method of teaching makes the good teacher.

Dr. Hunt: There have always been good teachers but we have no definite formulation about what made them what they are. I interpret your question to be related to my criticism that teaching has largely been rule of thumb, rather than scientific. Education has progressed through its good teachers. We learn to realize about the past. But science struggles to look ahead and predict about how to make things come out the way we want them. One of the answers I can offer is that good teaching depends on a combination of knowledge and enthusiasm for the subject matter, the type of teacher, the kind of student, and the circumstances. These exist in unlimited combinations.

This leads me to your question about the learning values to be derived from observation and participation. Some things are self-evident when we observe them intently against an interpretative background, while other things require us to become personally involved before we can learn. Let me ask: "How sick is the patient?" Then let's consider someone with a broken back who needs to be bathed. At first a young nursing student might observe how to give such care before she participates in doing it herself. Without some previous observation and understanding of the implications, I shouldn't want to participate in getting someone with a possible broken back or a skull fracture on to a stretcher and into an ambulance.

Miss Bowen: There are some things—such as driving an automobile—you can't learn by merely observing someone else. You have to get the feel of it, and you get that only by doing the driving, as well as observing. On the other hand, many of us have taken science courses in which we spent hours in setting up an experiment and following it through. To me this is wasted time, because this could be shown by film and followed by a discussion. Therefore, it depends on what you really want the students to learn. Do you want them to get insight into a process or do you actually want to develop skills?

Dr. Hunt: I agree, but how do you answer in terms of generalization? You are asking me general questions to which I have no answer.

In the next issue of NURSING WORLD we shall conclude the report on the discussion led by Dr. Hunt and give some pertinent clarification of generalizations.

WHAT DO GRADES REPRESENT?

Does learning ability influence the grades nursing students receive? In the concluding article in a series of three based on a study conducted by the author, she explains what the study revealed concerning scholastic aptitude and course grades.

by **ALICE E. KEEFE, R.N., Ph.D.**

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IN continuing with the analysis of the data collected from the schools of nursing records of 882 nurses[1] in terms of the basic assumption that "professional promotions should be related to competency based on intelligence, preparation, and ability,"[2] the question of the relationship between the scores on tests of scholastic aptitude and grades received for nursing courses in schools of nursing will be considered.

It has been determined from statistical evidence that little or no relationship exists between measured scholastic ability and promotions in nursing.[3] Since tests of scholastic aptitude measure "learning ability," it might be expected that holders of high scores would attain higher course grades and those with lower scores, lower grades.

TABLE I

A RANK-DIFFERENCE CORRELATION BETWEEN SCHOLASTIC APTITUDE SCORES AND THE COURSE GRADES IN PSYCHIATRIC NURSING. N-531 DIPLOMA GRADUATES

S. A. Scores Mid-points	Psychiatric Nursing Grades—Mid-Points 77	82	87	92	97	Mean Average	Rank	D	D^2
155	1	1	7	9	1	88.56	4	3	9
145	0	3	5	9	2	89.57	1	1	1
135	1	7	10	12	4	88.61	3	0	0
125	1	9	17	25	7	89.37	2	2	4
115	2	11	42	23	2	87.75	5	0	0
105	4	24	53	35	4	87.45	6	0	0
95	6	19	52	17	2	86.48	9	2	4
85	1	9	31	10	1	87.09	7	1	1
75	2	9	15	3	1	85.56	11	2	4
65	1	3	8	2	0	85.92	10	0	0
55	0	1	6	1	0	87.00	8	3	9

Rho equals .85

Due to the absence of definition, it is impossible to determine if reported course grades connote the broader concept of evaluation or the narrow concept of measurement. Work performed by students may be graded upon the basis of poorest, best, and average or upon the progress each individual has made from the point at which he started. The subjectivity and variability between instructors and schools are recognized. Regardless how they were arrived at, the final grades appearing on a student record indicate the judgments made of that student by those in positions to make the judgments. Grades indicate approval or disapproval of performance in terms of expectations.

It is a generally accepted assumption that an educational system is a sorting and selecting process: "In addition to the principle of intellectual ability there are such principles of selection as economic status, social status and social personality."[4]

Abrahamson* studied factors that had influence on the distribution of rewards and punishments to school children by teachers and peers. He recognized that children whose backgrounds, values, and modes of behavior most nearly resembled those of the controlling group were the children favored.

* Stephen Abrahamson, "A Study of the Relationship Between the Social Class Background of Junior High School Students and the Rewards and Punishments of the Junior High Schools," unpublished Ph.D. thesis, New York University, 1951.

TABLE II

A RANK-DIFFERENCE CORRELATION BETWEEN SCHOLASTIC APTITUDE SCORES AND THE COURSE GRADES IN PSYCHIATRIC NURSING. N-106 DEGREE GRADUATES

S. A. Scores Mid-points	Psychiatric Nursing Grades—Mid-Points 77	82	87	92	97	Mean Average	Rank	D	D^2
155	2	1	5	6	2	88.56	7	6	36
145	0	2	5	10	6	91.34	4	2	4
135	0	0	9	3	4	90.43	5	2	4
125	1	3	9	4	7	93.34	2	2	4
115	0	1	4	2	2	89.77	6	1	1
105	0	3	8	4	0	87.33	8	2	4
95	0	0	0	0	1	97.00	1	6	36
85	0	0	0	1	0	92.00	3	5	25
75	1	0	0	0	0	77.00	9	0	0

Rho equals .05

Rewards, represented by grades, are recognized as a motivating force in any learning situation. The withholding of rewards is a form of punishment and causes the individual to withdraw, by some mechanism, from an uncomfortable situation devoid of satisfaction. These discriminatory processes would seem to have the power to prevent a student who is "different" from achieving easily.

Tests

Intelligence tests have been constructed and validated in an attempt to predict academic and cultural achievements. It has been recognized that genetic, developmental, and motivational factors are involved. Davis,[5] Eells,[6] and Wade† are among those who have provided some evidence that educational systems are discriminatory, yet it is through these systems that an individual must be evaluated before he can aspire to higher education or make a free choice of occupation.

Psychiatric and Pediatric

Psychiatric nursing and pediatric nursing are among two of the courses included in the curricula of all the schools represented in the study group. Grades from these two courses will be compared with the scholastic aptitude scores.

When the schools were classified according to type of program for nurse preparation (diploma-granting or degree-granting), the information sought was not available on all records; this accounts for the variations in numbers reported in the different tables presented.

The mean average course grade was calculated for each mid-point score on the test of scholastic aptitude; with the mean for each score determined, the Spearman Rank-Difference correlation was calculated.

For the graduates of the diploma programs, a quite high correlation, rho .85, exists between the scholastic aptitude scores and the psychiatric nursing grades (Table I). In view of

† Durlyn E. Wade, "Student Success in a State Teachers College and the Distribution of Social Class Status," unpublished Ph.D. thesis, New York University, 1954.

TABLE III

A RANK-DIFFERENCE CORRELATION BETWEEN SCHOLASTIC APTITUDE SCORES AND THE COURSE GRADES IN PEDIATRIC NURSING. N-525 DIPLOMA GRADUATES

S. A. Scores Mid-Points	Pediatric Grades—Mid-Points 77	82	87	95	Mean Average	Rank	D	D^2
155	0	1	15	4	84.75	9	8	64
145	4	3	7	5	86.21	6	4	16
135	2	8	11	13	88.29	1	2	4
125	5	11	24	18	87.67	2	2	4
115	9	25	27	19	86.18	7	2	4
105	9	34	47	30	86.83	5	1	1
95	14	16	35	29	87.12	4	3	9
85	10	10	17	12	87.16	3	5	25
75	7	8	10	5	84.66	10	1	1
65	2	4	4	3	85.76	8	2	4
55	0	6	1	1	84.25	11	0	0

Rho equals .40

TABLE IV

A RANK-DIFFERENCE CORRELATION BETWEEN SCHOLASTIC APTITUDE SCORES AND THE COURSE GRADES IN PEDIATRIC NURSING. N-104 DEGREE GRADUATES

S. A. Scores Mid-Points	Pediatric Grades—Mid-Points 77	82	87	95	Mean Average	Rank	D	D^2
155	2	1	4	7	89.21	5	4	16
145	0	3	10	11	90.04	3	1	1
135	1	4	3	8	85.12	6	3	9
125	2	3	7	12	89.54	4	0	0
115	0	3	4	2	87.11	7	2	4
105	2	4	4	4	86.42	8	2	4
95	0	0	0	1	95.00	1.5	5.5	30.25
85	0	1	0	0	82.00	9	1	1
75	0	0	0	1	95.00	1.5	7.5	56.25

Rho equals .01

the predictive value of the test that scores below 80 fail scholastically or are in the lowest third, it is surprising that the mean average for those in the 60-70 range was 85 per cent.

Within the degree programs there seems to be almost no correlation—indicated by an rho .05—between the "academic ability" scores and the grades received in psychiatric nursing (Table II).

The same test was applied to the course grades in pediatric nursing for the two groups.

A more moderate correlation, rho .40, was exhibited for the pediatric nursing course than was observed for the psychiatric nursing course among graduates of the diploma-program schools (Table III). It will be noticed, however, that there is a difference of only 4.04 points in the mean average of students, regardless of scholastic aptitude scores. The lowest average is 84.25. This seems to indicate that the score of "learning ability" does not influence the course grades to any great extent.

The pattern of no correlation, rho .01, holds for the pediatric nursing as well as for the psychiatric nursing grades for graduates of the degree programs (Table IV). Again, the slight differences in the mean averages is apparent.

McManus[7] notes that there is in nursing education "confusion in selecting learning processes that are truly educational and evaluating learned outcomes that are consistent with education," and these "have resulted from failure to differentiate between mental processes of different levels involved in education as distinct from those used in training." The emphasis is on rote memory without developing the higher mental processes of association and judgment.

These reported grades lead one to question the predictive value of the tests of learning ability or the methods of teaching and grading and/or the content of courses where the student with low scholastic ability achieves grades as high or higher than those with better learning ability.

If school grades are not influenced by scholastic ability, other factors or influences may be at work.

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2. *Ibid.*
3. *Ibid.*
4. Lloyd W. Warner, *et al.*, *Who Shall Be Educated* (New York, Harper and Brothers, 1944).
5. Allison Davis, *Social-Class Influences Upon Learning* (Cambridge, Harvard University Press, 1948).
6. Kenneth Eells, *et al.*, *Intelligence and Cultural Differences* (Chicago, University of Chicago Press, 1951).
7. Louise R. McManus, *The Effect of Experience on Nursing Achievement* (New York, Bureau of Publications, Teachers College, Columbia University, 1949).

Interview

(*continued from page* 20)

in the advanced stage of cancer, the so-called spread stage, is the most challenging and rewarding. Unfortunately, many bedside nurses lose tremendous opportunities for providing the highest type of nursing care by looking on these patients with the attitude that "you can't do anything for them, they are going to die anyway," or "they are in such pain and have such odors, and they are so depressing to care for."

I deplore such attitudes among professional nurses and consider it a great challenge to care for a patient with extensive osteolytic metastasis to see how I can help her live a good life and ward off pathological fractures. Also, tremendous work is being done in late-stage cancer; for example, the hormonal control of spread by androgens and estrogens, the control of pain by the prefrontal lobotomy and nerve blocks, the spectacular work being done in radiation therapy, removal of the pituitary gland, and the recent development in bilateral adrenalectomy. Again, I could mention the exenteration operation for frozen pelvis in gynecological cancer and the disarticulation of a limb or hemipelvectomy for bone cancer. All these surgical advances call for the highest skill on the part of truly professional nurses, and I feel concerned that we spend so little time in educating our young practitioners in this vast field.

Q. Miss Nelson, you make it all sound so interesting and exciting and yet we haven't even referred to the field of radiation medicine. Would you be willing to continue with this interview another month?

A. I certainly shall be pleased to continue. There is so much a nurse should know about principles governing cancer nursing care, about the kinds of radiation used—X-rays, artificially produced and natural radioactive isotopes—the factors governing radiation safety, and other aspects which are new in the diagnosis and treatment of cancer.

It worries me when nurses say they didn't know radioactive iodine was excreted in the urine and consequently handled it carelessly. Other nurses are fearful when caring for patients receiving radioactive phosphorus, yet the nurse caring for this patient cannot be contaminated. Nursing education has a long way to go to help our practitioners learn how to handle these commonly used treatments, and I shall be happy to discuss this subject in a later interview.

War Against Heart Diseases

(*continued from page* 13)

across synapses are also required.

Anticoagulant therapy has significantly decreased deaths caused by embolism. In coronary thrombosis the heart lining (endocardium) over the area of infarction often becomes so involved in the disease process that a thrombus forms in the particular chamber of the heart—usually the left ventricle—whose wall is infarcted. Through the prevention of the formation of such a thrombus, the patient is saved from the danger of an embolus arising from the ventricular thrombus and causing a cerebrovascular accident, an infarcted bowel, or any similar embolic complication. Anticoagulants also prevent thrombosis of a leg vessel during the period of bed stay, thus protecting the patient against pulmonary embolism or gangrene of the leg.

Research is also being conducted to find a substance possessing the power to dissolve a newly formed blood clot. Fibrinolysin is the substance which during recovery from lobar pneumonia dissolves the fibrin that has filled the alveoli of the lung tissue. Fibrin is the substance comprising the essential portion of a blood clot. All other components of the clot, such as blood cells and even water, are held by the fibrin much as a sponge holds solid particles and liquid. The intravascular injection of fibrinolysin when successfully developed as a safe and effective procedure will no doubt become the ultimate form of therapy for thrombosis and embolism.

There is only limited value in successful treatment of heart disease unless society will allow the patient to return to a form of activity appropriate to his residual cardiac limitations. At the present time there is such a strong emotional component in the public's attitude toward a person with a history of heart disease that it is making it very difficult for him to become employed if any change in jobs is required. The compensation laws of most states penalize an employer very heavily if a person with a history of heart disease dies from any cause which can possibly be interpreted as job-connected.

One of the most effective weapons in breaking down this social and economic barrier has been the work classification units which have been established in some cities and are being set up in others. In these centers each patient is studied most carefully to learn exactly how much energy output he can tolerate without danger of going beyond his cardiac reserve. Upon the basis of this physical evaluation, plus the emotional reactions of the patient and his family toward re-employment, and the skills, knowledge, and intelligence of the patient, he is matched with an available job. The excellent health experience of patients who have received the evaluation and guidance provided by such a work classification unit has done much to aid the breakdown of the prejudice and fear that have been serious drawbacks to full rehabilitation of the cardiac patient.

Assistance for the cardiac housewife has been actively promoted by the American Heart Association through its Heart of the Home programs. An increasing number of State Heart Associations are now bringing this assistance to the women of their areas through organized programs of instruction. The instructor for these lessons in home-task simplification has often been appointed to the Agricultural Extension Service of the state's Home Economics Program.

Most recently the American Heart Association has been studying the energy expenditure required by the many types of farming activities and how these tasks can be modified so as to be most effective in conserving the energy of cardiac farmers.

Educational programs are now being prepared on the basis of research findings and soon will be ready for state implementation.

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